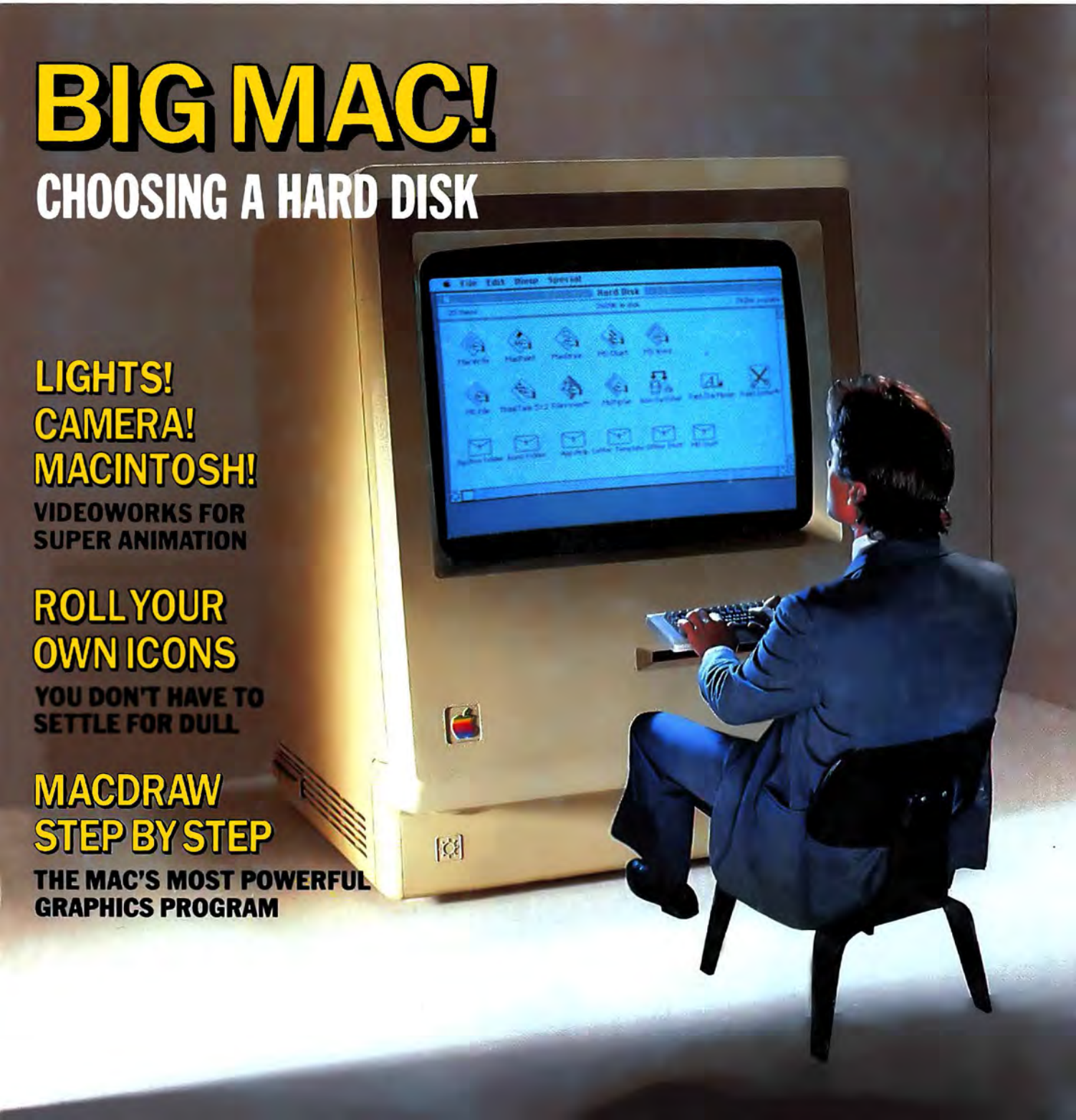
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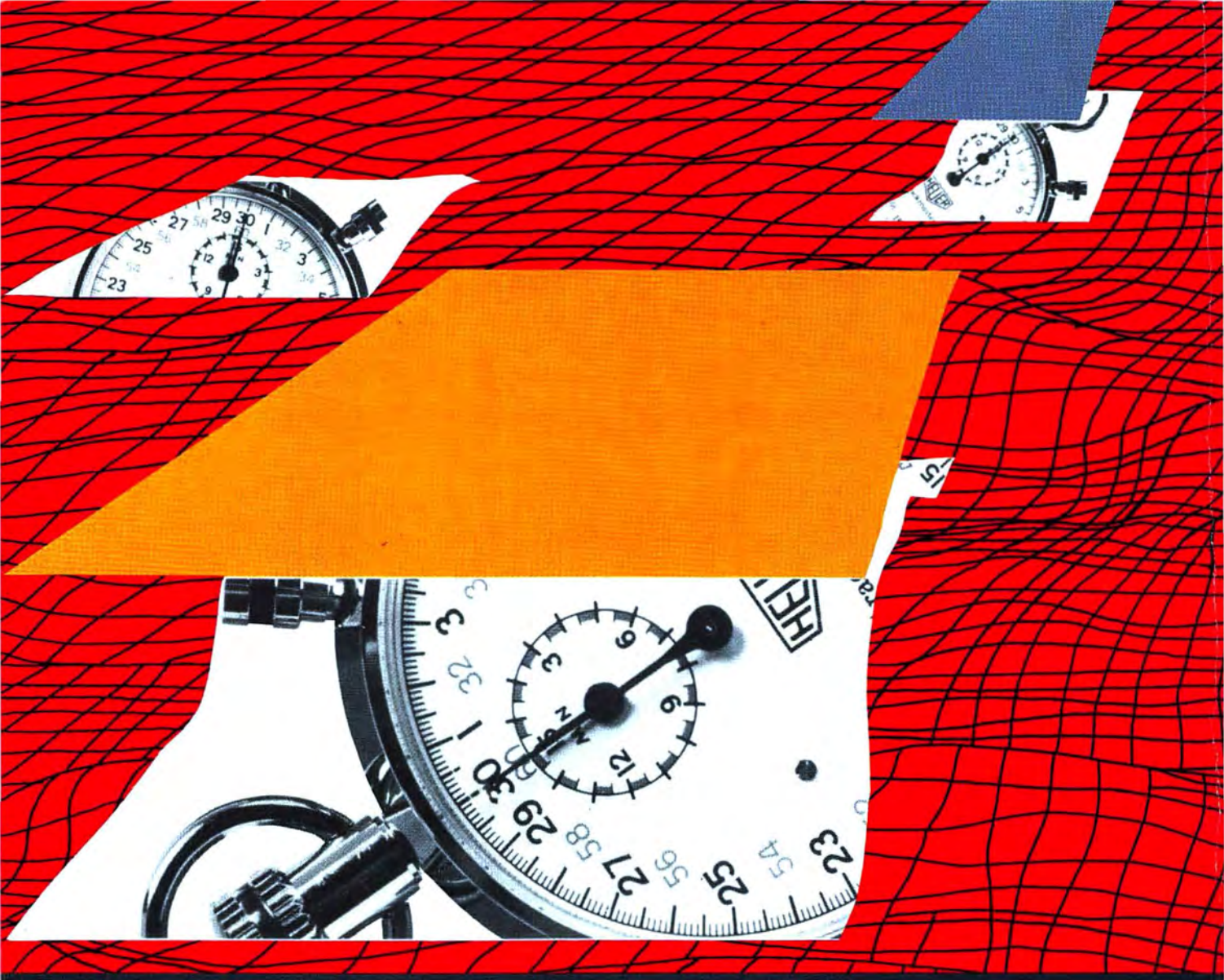
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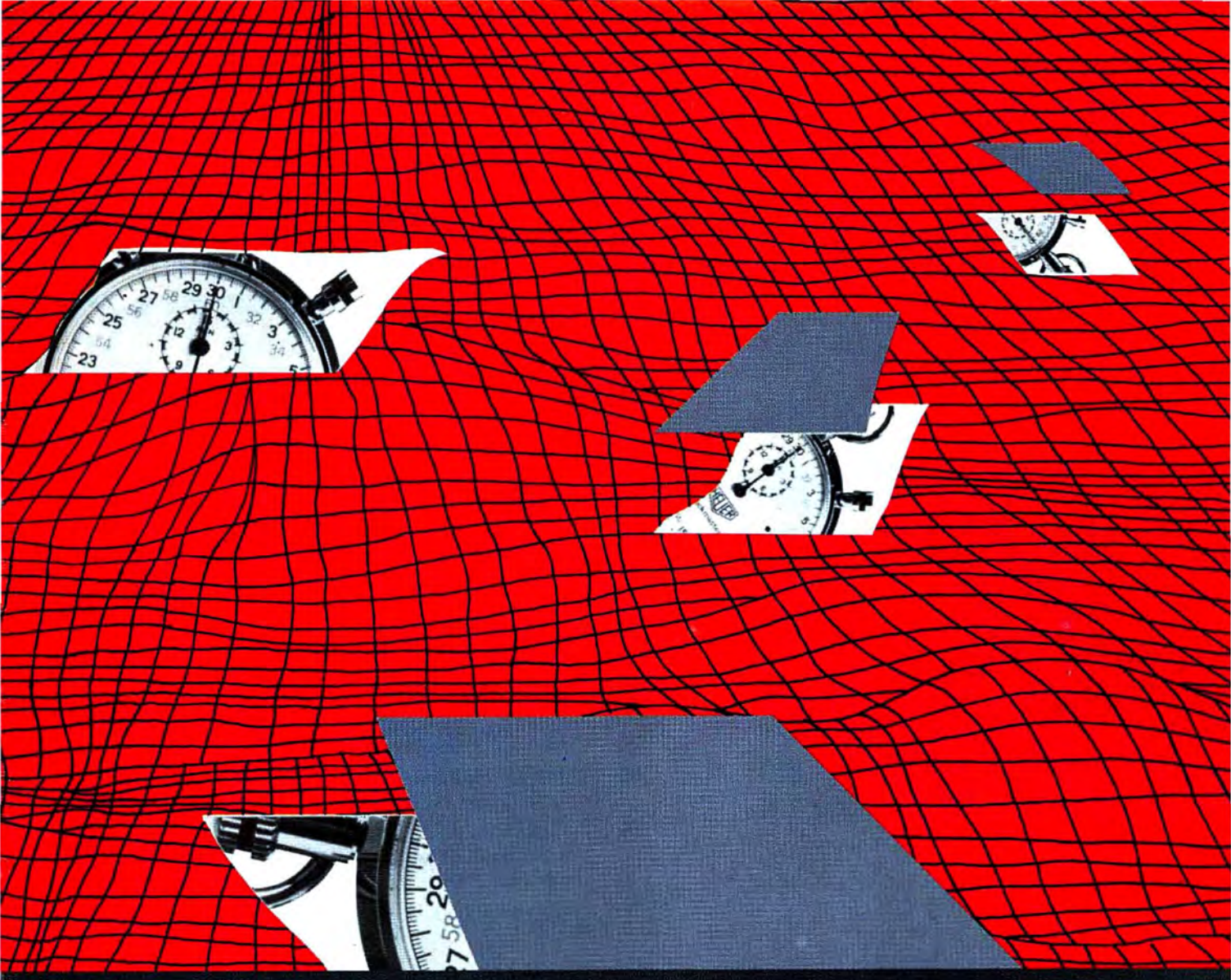
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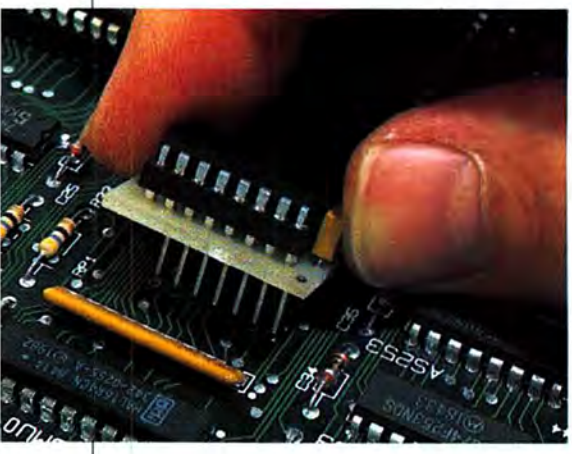
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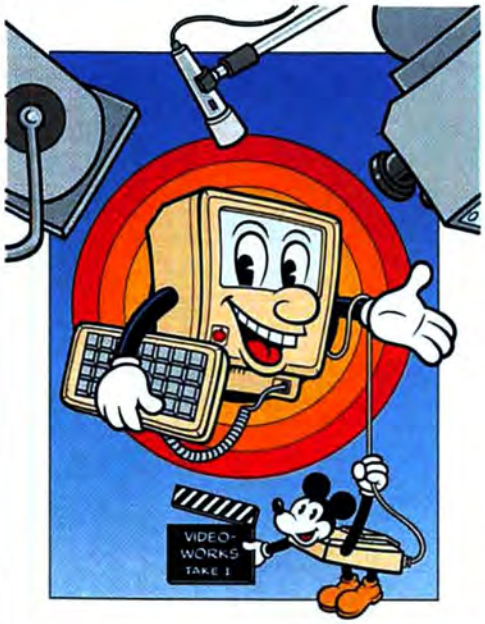
MacUser

COVER PHOTO by GEOFF SPEAR

CONT



114



96

POWER COMPUTING

58 OVER THE TOP WITH OVERVUE
A trusted office helper appears in a super-powerful, new version. *by Richard Herbst*

66 GETTING UP TO SPEED
Cut down on watching the clock using these hints from our resident speed demon. *by Steven Bobker*

MAC OFFICE

42 BETWEEN A ROCK AND A HARD DISK
Choosing a hard disk can set you spinning! *by Richard Herbst*

50 GO AHEAD . . . MAKE MY PAGE!
Use the *PageMaker* program for Win-Win reports that will make you the talk of the conference table. *by Michael D. Wesley*

RESOURCES

102 THEY SHOOT UTILITIES, DON'T THEY?
Luckily not, especially not these *"Quick and Dirty"* desk accessories and helpful applications. *by Steven Bobker*

108 BASIC: A DIP INTO THE ROM, PART 1
You don't have to be an assembly whiz to hack your way into QuickDraw. This first in a series explains how to access the Mac's built-in graphics via BASIC. *by Sharon Zardetto Aker*

GRAPHICS

74 MASTERING MACDRAW
Not an enhanced *MacPaint*, Apple's new power pixelator allows for true on-screen draftsmanship. *by Ian McKinnell*

96 MAC MOVIES!
Animation, eye-catching movements, everything from cartoons to feature films courtesy of *VideoWorks*. *by David Biedny*

128 MR. MACPAINT
Excerpts from an interview with Bill Atkinson, reprinted from INSIDE MACPAINT. by *Jeffrey S. Young*

ENTERTAINMENT

84 HEY, BIG SPENDER!
Financial simulation games may not net you a fortune but, if you win, you feel like a million bucks. *by Tracie Forman Hines*

VOL. 1 NO. 2 NOVEMBER 1985

E N T S



42

90 A GALAXY OF NEW GAMES
As fun as it is powerful, the Mac is attracting more and more of the best game designers. Here's what they have in store for us.
by Joyce Worley

INSIDE MAC

114 DELIVERING A FAT MAC
Step-by-step photos and text investigate the new kits for do-it-yourself memory upgrades. *by Neil Shapiro and Richard Herbst*

122 THE GOURMET'S ICON COOKBOOK
Last month we showed how to change an existing icon. This month's step-by-step details starting from scratch.
by Bill Steinberg

COLUMNS

11 THE EDITOR'S DESKTOP
Return to the days of the 60's! *by Neil Shapiro*

19 FROM THE REST OF US
Piracy or Morality? Letters *by the MacUser Community*

27 WEST COAST REPORT
Small developers have a big role. *by Michael D. Wesley*

31 THE PINSTRIPE MAC
Gutenberg and your Mac. *by Richard Herbst*

33 THE MACINTOSH BOUNDARY
*MacNosy*ing around a new program . . . *by Doug Clapp*

130 THE HELP FOLDER
Bundle bits to chips, the Mac Team has the answers.
by Dan Cochran

156 THE DEVIL'S ADVOCATE
This doesn't remind us of anyone we know. *by John C. Dvorak*

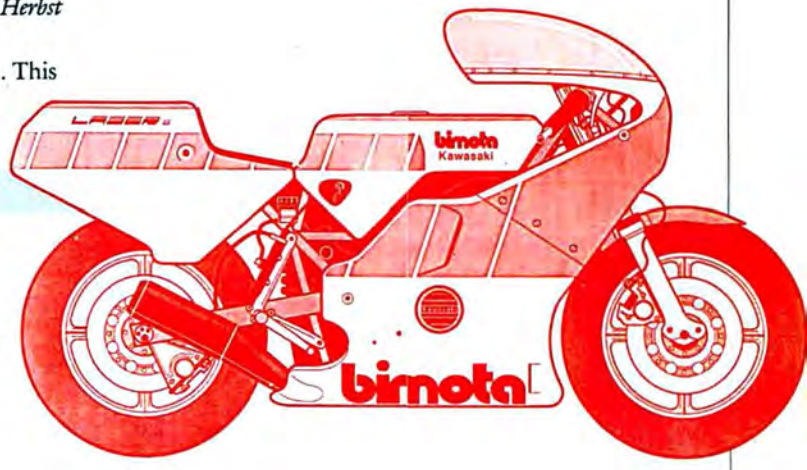
DEPARTMENTS

20 NEW ON THE MENU
Have you sent us your favorite bugs yet?

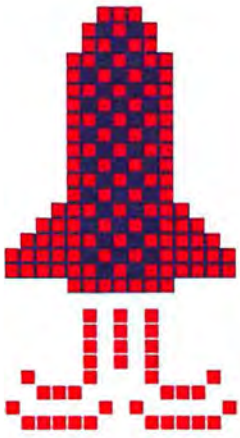
36 QUICK CLICKS
Seven reviews of interesting programs.

135 MINIFINDERS
Our capsule reviews pull no punches.

163 ADVERTISERS INDEX



74



122

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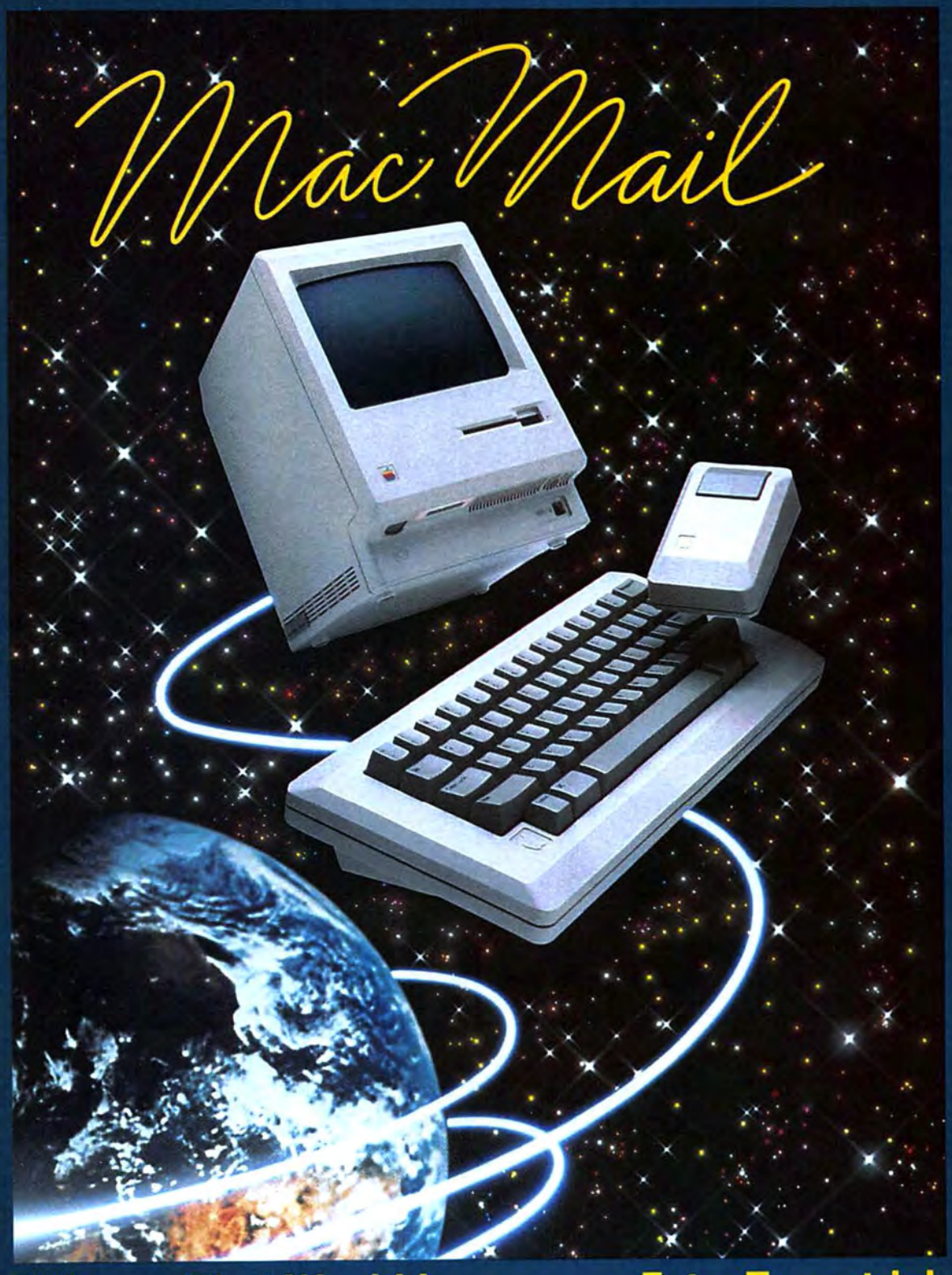
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for the MAC.

Your Mac's been lonely too long.

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Specifications:

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12.75 mb unformatted
10mb formatted

DISK DRIVE SEEK TIMES:
Adjacent track 18 ms
Average 85 ms
Maximum 180 ms

ROTATIONAL SPEED:
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POWER REQUIREMENTS:
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WEIGHT:
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Connects to your MAC via the modem or printer port. Printer connector and integral print spooler provided on MAC-10.

**See retailer for details.*

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The hostess of a lavish masquerade ball has just been brutally strangled.

Fortunately, there's a suspect.

Unfortunately, it's you.



Just slip SUSPECT,™ Infocom's latest interactive mystery story, into your computer and suddenly you are a newspaper reporter covering the blue-blood society event of the year, Veronica Ashcroft's annual Halloween costume ball. And every decision you make will determine the story's suspenseful outcome. Suppose, for instance, that while snooping about the mansion in your cowboy costume you decide to peek in the office. You simply type, in plain English:

>OPEN THE DOOR
THEN ENTER
THE OFFICE

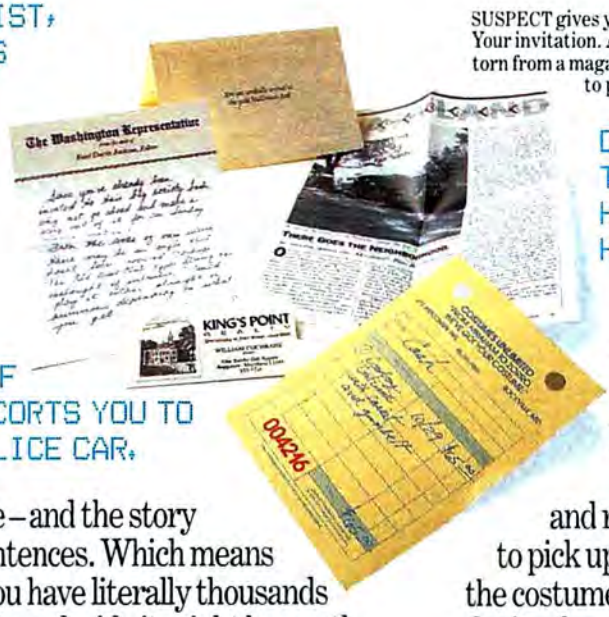
And the story responds:

YOU OPEN THE DOOR. SLUMPED BEHIND THE DESK IS THE BODY OF VERONICA ASHCROFT. HER MASK HAS BEEN PULLED OFF. AROUND HER NECK IS THE AGENT OF DEATH: A ROPE. IN FACT, IT'S YOUR LARIAT, WHICH YOU GOT TIRED OF CARRYING AROUND AND HUNG IN THE CLOSET WITH YOUR COAT.

You've been framed. And you have mere hours to discover who the real killer was. Because if you don't, you could be in serious trouble:

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A PRACTICED TWIST, SLIPS THE CUFFS ON YOU. "YOU'RE UNDER ARREST FOR THE MURDER OF VERONICA ASHCROFT." SERGEANT DUFFY APPEARS AS THOUGH OUT OF NOWHERE AND ESCORTS YOU TO THE WAITING POLICE CAR.



SUSPECT gives you clues even before you flip on your trusty computer. Your invitation. A cryptic note on the back of a business card. An article torn from a magazine. A receipt for your rented costume. Even a guide to proper etiquette during a murder.

You communicate – and the story responds – in full sentences. Which means that at every turn you have literally thousands of alternatives. So if you decide it might be worthwhile, for example, to dance with Mrs. Ashcroft's corpse, you just say so:

>DANCE WITH VERONICA'S BODY

And the story responds:

YOU'LL HAVE TO LEAD, YOU CAN BE SURE OF THAT.

This masquerade ball is one bash where you'd better go easy at the bar. Because simply staying out of the slammer is a challenge that could send the soberest soul staggering.



Other interactive mystery stories from Infocom include The WITNESS,™ a 1930's style whodunit thriller in which a case of blackmail turns into murder before your eyes. And DEADLINE,™ which gives you just twelve hours to find the murderer, before he finds you.

You'll have to solve puzzle after puzzle as you build your case. You'll search for clues. Analyze evidence. Overhear conversations. You'll even question suspects:

>COCHRANE, TELL ME ABOUT SAMUEL OSTMANN

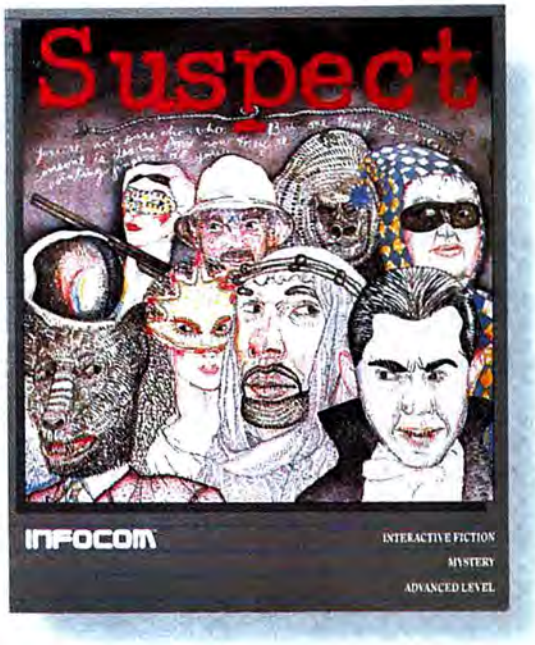
And the story responds:

COCHRANE IS UNSTEADY AND SWALLOWS A LITTLE MORE OF HIS DRINK BEFORE ANSWERING. "THAT SLIME! HE'LL GET WHAT'S COMING TO HIM ONE OF THESE DAYS. HE'S GOT AN IN WITH THE REAL ESTATE BOARD AND HE'S TIGHT WITH VERONICA. HE'S RUINING MY BUSINESS!"

And if you're clever enough, then maybe, just maybe, you'll prove your own innocence. But you'll have to hurry.

So polish up your party manners and rush down to your local software store to pick up a SUSPECT today. And remember, the costume ball lasts from 8 to 12. But if you don't solve the mystery, you'll soon be doing 18 to 20. With no parole.

Still not convinced? Try our Sampler Disk which includes portions of four different types of stories for just $7.95. If it doesn't get you hooked on the addictive pleasures of Infocom, return it for a full refund. If it does, you can apply the price toward your first Infocom story. You can't lose!



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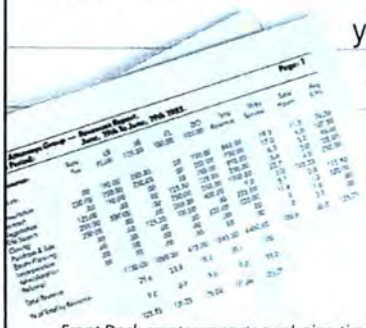
When you click open the simple appointment entry form and select the service that's going to be performed (from a menu that you create), Front Desk automatically calculates the proper fee or rate. Then at any time you can print out an analysis report for last month showing how many hours you or your staff spent—or how many dollars you brought in—by holding consultations, or selling wickets, or playing golf. And you can project how much you'll bring in on those services in the coming weeks or months.





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Front Desk creates reports analyzing time use in terms of hours spent—and dollars generated—per person, per service.

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THERE'S A MORAL ISSUE INVOLVED HERE

WHAT'S HAPPENED TO THE APPLE mystique?

In the good old days (1979) Apple was known as a company that cared about its end-users, that cared about the direction of the computer industry and that cared about the state of the world in general. When they released the Apple II there was no doubt that it came from a company dedicated to The People. There was a sort of idealism apparent that tied in with a 60's mentality of using technology to change the world for the better.

Flowers and Apples

Do you remember the 60's? I do.

Did you walk in civil-rights demonstrations, argue endlessly about the moral rightness — or wrongness — of war and this country's foreign policies? Did you have a feeling that somehow, someday, it would be American Science and Technology that would change this world for the better? Feelings ran deep that, if only industry would commit to certain goals and principles, the world could really be made a better place.

I felt that way then. I still do.

I was a Journalism major when I first heard about personal computing. And it wasn't until a year or two after college that I read the first publications that got me involved. These publications still had the flavor of the late 60's, an aura of people-to-people involvement and commitment.

The very first computer book I read was called *What To Do After You Hit Return* and it was published by The People's Computer Company run by, among others, Dave Albrecht. Dave styled himself as The Dragon. The book was an oversized volume containing page after page of rough, typewriter-printed listings, cartoons and trivia. Embedded within this dragon's horde was gem after shining gem of jewel-like programs that would enable anyone — even me — to control the power of a microcomputer.



Hey, there was an *atmosphere* in computing then! When People's Computer Company brought out a magazine they christened it *Dr. Dobb's Journal of Computer Calisthenics and Orthodonture* and subtitled it "Running Light Without Overbyte."

The people who started personal computing — they were after something: They wanted nothing less than to change the whole darn world.

They came pretty close to succeeding.

When Woz and Jobs brought out the Apple II they didn't just do it to make money. In fact, few people would have thought they were going to make any cash at all.

But the first Apple II was the first computer dedicated to the idea of anyone being able to use it to fight back against more monolithic, private, huge computer systems. The Apple II was meant to be the great equalizer, the six-shooter that made all cowboys equal.

So Grows The Tree

Then, gradually, Apple became more and more corporate. They began growing faster than a silicon crystal in a supersaturated solution.

Back in 1979, if you wanted to talk to someone at Apple you picked up a phone. You could get through to almost anyone. But as they outgrew the garage it began to seem that they were losing touch with their roots.

But the philosophy of computers for people remained; in the background, but always there.

The Macintosh was Apple's recommitment to its original corporate goal of being the supplier of computers to The People. The entire Desktop Metaphor of the Macintosh was developed so that everyone with a need to do so could finally access a powerful, computing machine.

What *is* the Macintosh other than Power To The People?

Apple itself made that point with its famous "1984" commercial. The woman athlete with the hammer, she was throwing it for all of us. When the hammer hit the screen it shattered a lot of concepts about where computers are now, and where they are headed.

Apple is now indeed a corporate giant. Are they now as unfeeling and cold as any Big Blue monolith? Anyone can hire an advertising agency to design a TV ad. How deep, how real, is Apple's commitment to the ideals of the past?

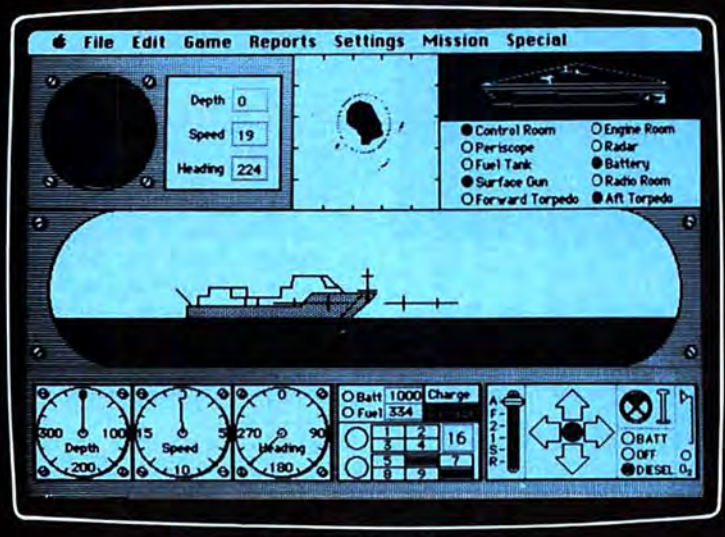
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The Apple Blossom Statement

While no one treated the following as a big news story, the AP news wire carried very interesting, almost astonishing, copy about Apple Computer Inc. and its relations to South Africa.

Apple, in response to South Africa's racist policies of apartheid, has decided to end all deliveries of products to its distributor there by the end of October.

I don't really think that IBM, GM, Bechtel, Nestle's and other worldwide conglomerates of corporate power are going to rush to join Apple on this particular barricade. Too bad. Because, all together, maybe they *could* change the world.

On a personal note: I'm wearing my old T-shirt with the faded but full-color Apple logo on it with new feeling these days. I own Apple-brand computers, and I'm *proud*.

Apple may be a company involved with the future, but it hasn't forgotten the past.

Closer To Home

Meanwhile, have we forgotten our own future? The Letters page in this issue features a missive from Marc Cantor, who is president of MacroMind, the company behind such products as *VideoWorks* and *MusicWorks*.

Marc's letter makes the point that Macintosh owners are in a very precarious position. We all love having a ton of software for our Macs and hate the long wait for it to appear on the shelves.

There's a lot of "pre-release" software floating about in users groups and available through many other avenues. But the marketplace is being endangered by so many people having programs — for free — before the programs go on sale.

Sure, most of us are honest. We fully intend to buy a production version of a program when it comes out. But how many of us really, for one reason or another, follow through on that promise? Maybe we are buying only the more complex programs with the most bulky manuals? What's happening to the well-written and intuitive software?

Read over Marc's letter. Then look through your own collection of software.

There's a moral issue involved here. Of course, moral issues aren't as fashionable as they used to be. "Do Unto Others..." is not exactly the yuppie battlecry. But this is an important issue that we all have to face. We recommend that you do what you might have done in the 60's.

Set of Knives

Mac the Knife

Yes indeed. A set of **Mac the Knife** Clip-Art and Font Volumes. One for most every application.

If you're the type that makes up a lot of forms or newsletters on the Macintosh, you've probably noticed that they could use some illustrations or something to make things look better. That's where **Mac the Knife, Volume I: A Clip Art Treasury** comes in. This best-selling program has literally hundreds of images to



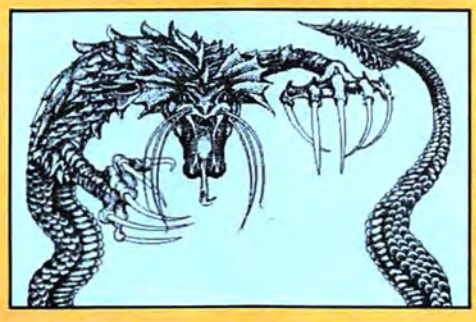
choose from – great for presentations, business graphics, ads, coupons, flyers or just plain fun.

If you do a lot of word processing on your Mac, you've probably noticed that although the Mac has a lot of typefaces, you really don't have the flexibility someone with expensive real typesetting equipment has. That's where **Mac the Knife, Volume II: World-Class Fonts** comes in. Two dozen fonts in all kinds of



styles and sizes – from decorative display typefaces to practical text fonts – come with concise documentation to get the fonts to where they can do you some good.

And finally, if you use your Mac in any one of a number of creative ways, you've probably noticed that if you can't draw, trying to bring life to your ideas in MacPaint can be frustrating. Yes, that's



where **Mac the Knife, Volume III: Mac the Ripper** slashes in. This specially-priced two-disk set has the kind of imagery you've always wanted to see. Large and small drawings and useful illustrations, including many for almost any conceivable occasion from Hanukkah to Christmas to birthdays to Chinese New Year are drawn in magnificent detail. Included are a number of specialty headline fonts so you can do BIG LETTERS. Once you see it, you know why we call it...

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This message is for the several hundred thousand people who bought a Macintosh because of its user-friendliness—and then found it a bit slow in expressing its affections.

For those who find themselves frequently feeding floppies. And waiting. And wishing the Macintosh's capacity for work matched its appetite.

For all those who've learned to live with these and a variety of other limitations, we're pleased to announce a richly rewarding un-learning experience.

INTRODUCING HYPERDRIVE 20. TWENTY MILLION BYTES. NO WAITING.

HyperDrive 20 is a new internal hard disk that, when installed in your Macintosh, makes it the World's Fastest Macintosh. Up to 15 times faster than a conventional Mac that runs on floppies.

In fact, as Personal Computing magazine put it, "Using a HyperDrive compared to a regular Macintosh is akin to cooking with a microwave oven instead of a gas range."

This rather heady level of performance may be attributed to a simple principle of engineering: Macintoshes, like human beings, travel faster and better when unencumbered by excess luggage.

Unlike all other hard disks, which are external, HyperDrive connects directly to the Macintosh's microprocessor. This gives it an insurmountable lead over external disks—which, since they have to slow down to talk through one of the Macintosh's ports, will forever lag behind.

A FAREWELL, OF SORTS, TO FLOPPIES.

The HyperDrive 20 hard disk holds as much as fifty floppies (twenty megabytes). And if it holds them, you won't have to.

But besides holding more information, HyperDrive manages it more intelligently.

It recognizes, for example, that files are organic creations, with a tendency to grow with their own special urgency to their own self-determined size. HyperDrive is engineered accordingly.

It lets you divide your disk into 32 file drawers, each holding up to 512 files. These files automatically re-size, swelling or shrinking according to what you put in or take out. Which lets you use storage space according to your dictates, instead of your computer's.

POWERFUL ENOUGH FOR POWERFUL SOFTWARE.

HyperDrive 20 will run all Macintosh programs, including Apple's new Switcher. And it will run them faster.



MANAGE HUGE AMOUNTS OF INFORMATION, INSTEAD OF HUGE AMOUNTS OF FLOPPIES.

But HyperDrive 20 will also run programs that the regular Macintosh, for all its friendliness, lacks the sophistication to handle effectively. Programs such as Lotus' Jazz, for example. And Microsoft's Word. Powerful business software that can multiply a Macintosh's performance and productivity.



VAST DIFFERENCES IN PERFORMANCE. A TINY DIFFERENCE IN APPEARANCE.

HyperDrive 20 also comes with its own software that elevates both the friendliness and the sophistication of your Macintosh.

Such as a backup program, unsurprisingly named Backup, that lets you back up and restore information from the hard disk to and from your floppies.

There's even a print spooler that lets you use your Macintosh for other jobs while your printer is busy churning out the one you just finished.

VAST VS. TWICE AS VAST.

For all its emancipating qualities, there's one item that HyperDrive won't liberate you from. The Apple warranty.

Even though your Macintosh must be opened (by an Apple dealer) to install HyperDrive, your warranty remains intact. But Apple won't be the only one watching over you.

HyperDrive is further backed by our own 90-day limited warranty and an optional HyperCare extended service contract. And service is readily available at participating Apple dealers nationwide. (See your nearest dealer for complete warranty details.)

In fact, the only imaginable problem left unattended by HyperDrive is that of deciding which to buy—HyperDrive 10 or HyperDrive 20.

That will depend largely on how much capacity you need: vast or twice as vast.

You can make that determination by visiting a participating Apple dealer and seeing HyperDrive in action. Or call us at (800) 422-0101 or (617) 492-5500. In Canada, call our distributor at (800) 565-1267.

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MAC & THE POWER USER



PHOTOGRAPH BY PETER SMITH

Notwithstanding the opinions of our esteemed contributing editor, Mr. John Dvorak (see page 152), there's an awful lot of rubbish talked about the Macintosh and the serious user.

Is the Mac a wimp computer?

MacUser magazine doesn't think so. We believe the Macintosh is one of the *most* powerful personal computers in the world.

In common with every other computer, it has its limitations, its quirks and those tasks to which it is best suited. But that having been said, the vast majority of Macintosh users truly coax only a fraction of the Mac's potential out of their system.

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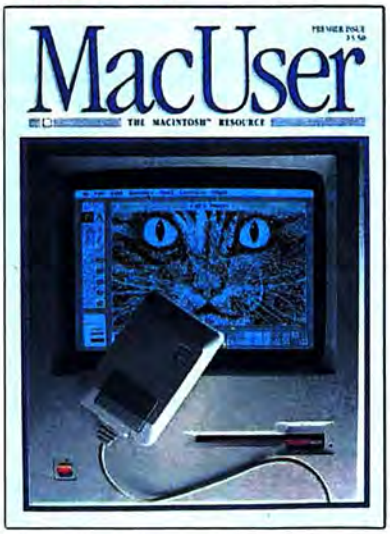
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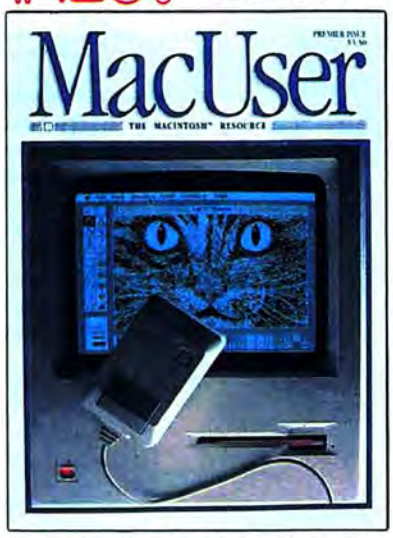
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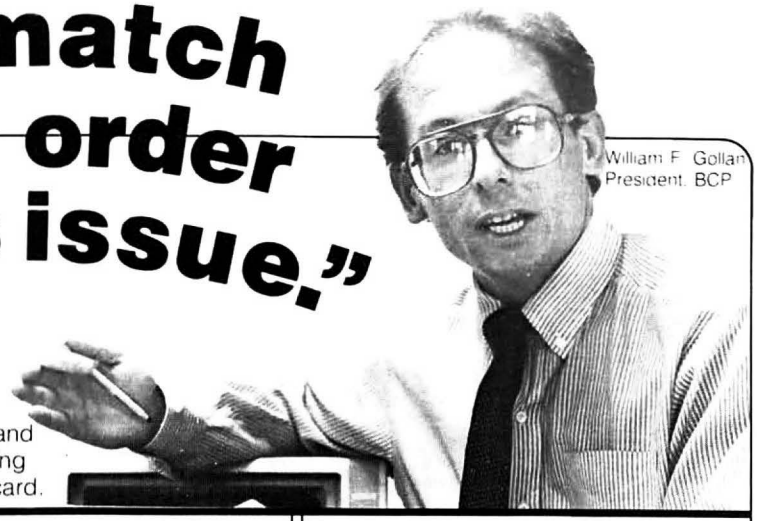
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Deja Vu is a graphic/text adventure in which everything seems vaguely familiar, yet you remember nothing. Advanced Macintosh technology lets you explore your environment with a click of the mouse, but you'll still have to solve this Chandleresque murder mystery yourself! Available Fall 1985.

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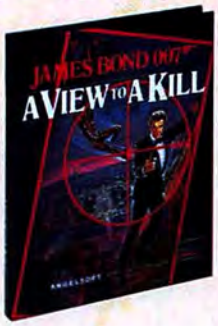
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Based on the novella of the same name, this eerie adventure takes you into a quiet New England town. Suddenly, a dense fog mysteriously descends, and with the mist comes Stephen King's own brand of terror that only the fearless can survive. Available Winter 1985.

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James Bond 007 A VIEW TO A KILL



A madman's cravings for power and vengeance spell destruction for Silicon Valley. Take your place as Agent 007 and experience all the elegance and daring of James Bond's finest adventures. Available Winter 1985.

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Read & Heed

As the creators of *MusicWorks*, *VideoWorks*, *Art Grabber* and now *CheapPaint*, we (MacroMind Inc.) have witnessed a disturbing phenomenon in the Macintosh user community. Programs that we have prereleased to people for the purpose of beta testing have found their way onto many public domain disks. This is especially true of our *Art Grabber* program (also known as *Art Thief* or *Paint Grabber*) which was being distributed by CompuServe and other BBSs as well as available on most public domain disks for a period of time. We did *not* authorize *Art*



Thief or *Paint Grabber* to be public domain at any time. Most organizations we contacted quickly removed the unauthorized programs, but the damage was done.

MusicWorks also is widely copied illegally, and many user groups have even given out prerelease versions .34 and .37 as if they were for public consumption. One store in L.A. even had the gall to sell a prerelease version.

If we remember back to September 1984, there was very little good Macintosh software available. As soon as *MusicWorks* made the scene, everybody had to have a copy of it, and so the prerelease versions spread like wildfire. Now these same people, who were so grateful for having a decent piece of Mac software, refuse to go out and buy a legal copy of *MusicWorks*.

The industry needs a grass roots campaign to put an end to stealing software from hardworking programmers! The only way that we can continue to produce high quality products like *VideoWorks* and *MusicWorks* is by people buying the software, not *copying* it!

We think that $79.95 for *MusicWorks* and $99.95 for *VideoWorks* are fair prices to pay (besides the fact that you can buy our products at up to 40% discount anywhere). It cost us a lot of money to develop these products. We feel that we have contributed a lot to the Mac community and have tried to keep our software prices low. It is time for the user community to show support for developers like ourselves.

The Bottom Line: If you are regularly (once a day or once a year) using a copy of one of our products that you didn't pay for, you owe it to us and to the future of the Macintosh to buy a copy.

Marc Canter
President, Macromind, Inc.

More MacAbuse

We of the MacAbuser community wish to issue a call for users to return to the principles that personal computing used to mean. By that, I refer to seeming overdependence on Apple to provide all the answers for anyone using their brand of computer. We all sit around bitchin' and a-moanin' about the lastest shuffles and gossip about what Apple will do or won't do.

Yes, the tools that we need to do custom work (like ex-Apple-er Bert Sloane's Font/DA Mover) should be done by Apple because they got a jump on how to figure out the intricacies of the machine. But that didn't stop Don Brown from writing DAM *way* before Apple released its own. But Apple sells machines, not uses for them. Users should not be so dependent on the Cupertinians for Gospel Programs like *MacWrite* and *MacPaint*. (Yeah, yeah they are good ones, but are only examples of what can be done. And to think that they are the only way something can be done stifles both the creativity that the computer can enhance and the reasons for having one machine for one person.)

The IBM mentality of depending on the machine's builder for all goodies for that machine is starting to grow. It must be nipped in the bud before it gets any further. How many good ideas lay stillborn by someone's inability to get them realized is a matter of conjecture. But I think that Apple's priority should be to get users to realize that they are not and cannot be supplier of all the promise and potential that this machine has.

I would rather than someone try to make a new and exciting use for it and fail, than not try at all. Better creative tension than smug complacency *any* day.

So, dear user, do something radical with your machine. Find a way to get what you do with it out to the rest of us through MAUG, or your local user group, or selling it in a magazine. But get it done because YOU want it done. Without some creative anarchy with this tool, we all lose.

Larry Loeb

Click Where?

I was very impressed with your premier issue. The articles were informative, and the level of technical sophistication of articles like "The Gourmet's Icon Cookbook" is what the Macintosh community has been longing for. And the graphic design and overall "look" of the magazine are impressive. Kudos to your technical editing and art direction staffs. A first-class effort.

Congratulations, also, on snaring John Dvorak as a columnist. While I don't always agree with him, he's certainly fun to read. Looking forward to his next column.

One thing, though, about the window on the cover: Aren't you worried that the competition will sneak into newsstands and click on the go-away box? As far as I can see, that would be the only way to keep this magazine out of the hands of the information-starved Mac community. It's like manna from heaven.

Keep up the fine work.
Robert R. Wiggins

Who's a Big Wimp?

MacUser seems to be the perfect mix of meaningful Macintosh information and interesting, insightful articles. I especially enjoyed the many minireviews in your MiniFinder section.

As for Dvorak's column, as always I hated him...and loved him. I wonder what he thinks of those of us that enjoy both the "8s" and the "6s"? Big wimps?

Sincerely,
Tom DeFazio

NEW ON THE MENU

COMING ATTRACTIONS

Microsoft hopes to release *MouseWorks* in time for Christmas. We've gathered several reports together to produce this first look.

MouseWorks (which may come out as *MicrosoftWorks* [ugh]) is still in alpha test but on schedule for November release. It will consist of five modules. Users will be able to have up to six documents of any kind open on the screen at once.

The word processor is a cross between some of the features of *Word* and the look and feel of *MacWrite*. It will have paragraph rather than line formatting. A unique feature is the DRAW command which allows users to select one of four line thicknesses and then draw a frame around anything chosen. The frame overlays the text.

The spreadsheet is 256 columns by 9,999 rows. It's obviously based on *Multiplan* but has some enhancements. For example, users can format individual cells to be normal, bold or underlined. The grid can be turned on or off. Eventually 52 functions will be available, although only one works now. Spreadsheets can be split into up to four panes. Titles can't be frozen. And (as MS claims it would cost many weeks to code) there are no macros and spreadsheets can't be linked. Those features will be included in an early 1986 upgrade. (No policy on that, but will probably be standard MS, and thus will cost users.)

The database will be a subset of *File* (no surprise there). Records can contain up to 30 fields. Text formatting (normal/bold and/or frames) can be applied to either selected fields or whole records. Users will have good format control.

The communications module supports Hayes compatible commands, Xon/Xoff and Xmodem transfer protocols, and has an eight-number phone directory.

Neither auto redial on busy nor macros are supported.

The charting/graphics module is only accessible from the spreadsheet. A full range of types is supported. Charting is limited to simpler types of charts—pie charts but no exploded pies, for example.

MouseWorks will be both ways compatible with *Word* and *File* for sure and possibly with *Multiplan*. *Excel* and *Chart* compatibility don't seem feasible.

Color Mac? No. Color From the Mac.

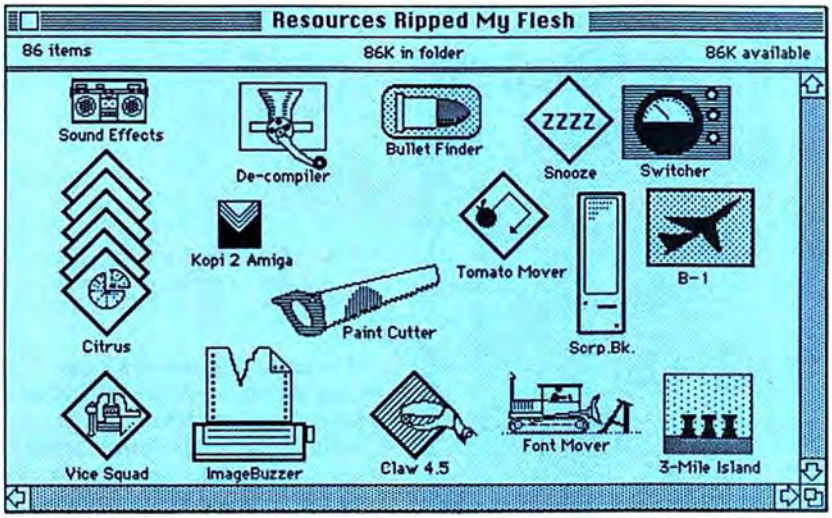
A recent wave of press releases (well, three anyway) promise color *MacPaint* output. All require special software and either a color TV or RGB monitor.

Users will first create images with any Mac software and then move them to the special versions of *MacPaint* using standard cut and paste techniques. Once the image is moved, the new software color is added and the results are either viewed on the color screen or transferred to film.

Prices and shipping dates have not been announced, although we expect to see at least some of these units demonstrated at the Boston MacWorld Expo. Look for a full report next month.



***Numeric Turbo* is Assimilation's high-speed trackball combined with a full-function numeric keypad that provides function keys, cursor control and a keypad. The unit attaches to the side of the Mac keyboard with velcro strips and can be operated from either the left or right sides. *Numeric Turbo* is compatible with *Jazz*, *Excel*, *Ensemble*, *Quartet* and *Dollars & Sense* and is fully operable on AppleTalk. An extra port on the unit permits the mouse to join the party. $149, Assimilation, 485 Alberto Way, Los Gatos, CA 95030.**



Would the anonymous sender of the above kindly inform us which programs are shareware as a number of editors are anxious to review them.

UPDATES

Macintosh programs all seem to have a feature not often found in programs written for other computers: They evolve, and updates are released, and eventually you, the user, has to wonder if you have the latest version, the most recent update. Every month in this space we'll tell you the latest version numbers (as of press time).

Finder	4.1
MacWrite	4.5
MacPaint	1.5
MacDraw	1.7
MacProject	1.0
Switcher	4.4
ThinkTank 512	1.1
Red Ryder	6.0
Helix	1.3
Jazz	1.0
Multiplan	1.02
MS BASIC	2.0
MS Word	1.05
MS File	1.05
MS Chart	1.05
Smartcom II	2.1C
OverVUE	2.0
Thunderscan	2.4

68000 WATCH

About 5000 Atari 520 STs were shipped to dealers in mid-August. Carrying a $799 price tag for a basic black-and-white unit and $999 for a color setup, the units were snatched off dealer's shelves. However, reports indicate that the return rate almost matched the shipping rate. A lot of 'em don't seem to work.

Those that do work don't have much software. There will soon be the inevitable Haba product, allegedly a program that will let you write and edit your own will! And possibly a spreadsheet, but Atari says that *GEM Write* and *GEM Paint* will not be released until mid-October. Check your local stores. And you thought that early Mac owners had a rough time.

All has been quiet on the Amiga front. Small third party developers are still having a very hard time getting machines to work with. And quantity shipments have been delayed a bit. Units should be reaching dealers though, as you read this.

MacUser's evaluation unit is still on hold, according to Commodore's PR people. As soon as we get it, we will check it out and objectively report to you. We're particularly interested in its KickStart system, where the operating system is loaded in a 256K block of protected RAM when the machine is powered up. This is a feature that was not covered in any of the first glowing reviews.

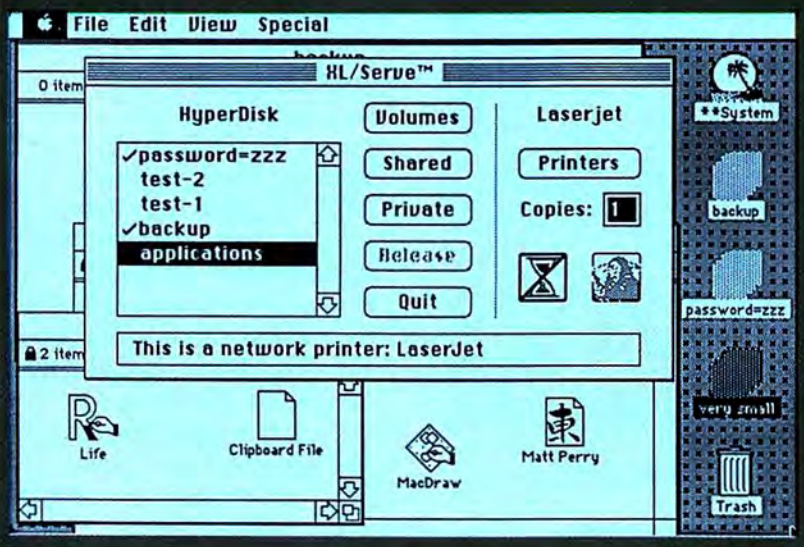
THE RUMOR MANAGER

John Dvorak was recently seen coding a program. When we asked him if it was a Mac program, he merely growled. When we tried to sneak up for a look, his faithful dog Sparky growled. But it did look like a Mac program. More soon Steve Jobs has been talking to several groups in Europe about forming a new company, most likely in the computer field a 40-meg hard disk for the Mac will hit the stores before Christmas, and will be priced below $2500 a portable Mac with a TFT (thin-film transistor) color screen exists in prototype form a new LaserWriter based on the Kyocera 10 page per minute laser engine will be out within six months and will list for under $5000 two of the new Sony double-sided drives will fit in a Mac case. 'Nuff said? look for a surge in Mac accelerators.



Michael "Shatter" Saenz exhibited his talents at the MacUser booth in Boston. Look for this latest edition of "Shatter"

NEW ON THE MENU



Imagine a 512K Mac connected via the AppleTalk network to four hard disks (a Quark QC10, a Paradise, a HyperDrive and a Mac XL) and four printers (a LaserWriter, a Hewlett-Packard LaserJet, an ImageWriter and a C-ITOH 8510A), everything controlled by the latest version of *XL/Serve* running on the Mac XL, and with the print spooling function about to take a document named "applications" from the HyperDrive and print it on the LaserJet, using the default system on the Paradise. Whew, leaves you sort of breathless.

HOT OFF THE WIRE

Two spanking new telecommunicatiions programs are now undergoing final tests.

Mouse Exchange Terminal will be Dreams of the Phoenix's entry into the crowded Mac telecommunications field. This $39.95 program can emulate any terminal and has user-defined macros. The program was written by Bill Bond and is based on the powerful and easy to use *FreeTerm*.

The other program is Software Venture's *Microphone*. This under $100 program features a unique "Watch Me!" mode that remembers user and system actions. Telecommunications automation is just around the corner. *Microphone* also has powerful scripting (macro) functions and an excellent user interface.

IS SWITCHER REALLY FREE?

Switcher, Andy Hertzfeld's wonderful productivity aid, has always been referred to by Apple as a free item.

Apple has honored that promise, although in a roundabout way. Users who are willing to print their own manual and have some adventuring spirit will be able to obtain *Switcher* from MAUG on CompuServe (Go PCS-23) and through other electronic bulletin boards.

Most users will get their copy as part of a commercial software package. These packages will include *Switcher* and a tested, documented *Switcher* document. Apple is licensing *Switcher* to software publishers for $250 per year. They require their licensees to provide the tested set up document and clear instructions.

Finally, those users who want to explore the frontiers of *Switcher* will be able to obtain a nicely packaged disk and manual from Apple dealers. The disk will include some other utility software and the package will carry the reasonable list price of $19.95.

Switcher TidBits

Every application has a magic number, the number of kilobytes (K) that make it run best in *Switcher*. Users can only discover these numbers through trial and error or listings published by the various user groups. Examples of magic numbers are 304K for *Jazz* and 179K for *MacPaint*.

Magic numbers will soon become unnecessary as developers add SIZE resources to their products. The SIZE resource tells *Switcher* exactly how much space the program requires. All of this is detailed in *Inside Switcher*.

Switcher 4.3 was announced as the release version in August. Sharp-eyed readers will note that the actual release version is 4.4. What are the differences? Version 4.4 corrects a bug by adding two instructions which take a grand total of six bytes!

The Analog Fence

Some users who upgraded their 128K Macs to 512K have reported overheating analog boards. (The analog board is the circuit board containing the sound and power supply circuits that is mounted on the left side of the Mac.) Here's what **MacUser**'s investigation uncovered.

The first 72,000 or so Macs (all 128s, obviously) used Rev. B of the analog board. All later Macs (both 128s and 512s) have Rev. C. Component for component they are identical although the layouts differ slightly. Rev. B has one extra part, the analog fence. The analog fence is a metal strip that sticks up from the board. It is tied in to the circuitry and was designed to dissipate the heat generated by the power supply.

Thing is, it didn't. In fact, by blocking a bit of the airflow, the analog fence made things slightly worse. The heat problem does not affect 128K Macs, but since 512s work a bit harder, there is more heat to get rid of. Most 512K Macs with the analog fence have no heat problems. However, if you have heat problems, a technician can easily remove the fence. But if it ain't broke, don't fix it.



ADVENTURES IN GAMING

Armchair adventurers can look forward to huge strides in state-of-the-art computer gaming, thanks to the efforts of several supertalented designers and their companies.

Silicon Beach Software, well-established as a leader in Mac entertainment programs since its smash hit *Airborne!*, is about to turn adventure gaming on its ear with *Enchanted Scepters*, an illustrated text game with stunning graphics, digitized sound effects and even a little pseudo-animation. Rumor has it that the construction kit used to create this eye-popper will be available a few months down the road.

Players of Mindscape's *Deja Vu*, an icon-driven adventure game, have only to click on wanted objects to pick them up off the screen and transfer them to a "possessions" window. If you'd rather click than type, this one's for you.

Entertainment software leader Electronic Arts is bringing a number of its best-loved hits to Mac enthusiasts. Dr. J and Larry Bird can now go *One On One* thanks to a new, two-controller adapter available from Assimilation. More strategy-oriented types can try their hands at *Archon*, a sort of live-action chess game in which pieces battle for possession of each square. EA will also be distributing Origin Systems' *Ultima III*, *Moebius*, and *Auto Duel*. And, for the most double-domed among us, they'll be offering a *Calculator Construction Set* which allows users to create custom calculators, then add them to disks as desk accessories.

IT'S A BUG!

Remember to send in those bug reports. Let us know about any bugs you find in commercial software. We'll be starting our listing next issue, and we'll pay $25 to (and print the name of) the person who, in our humble editor in chief's opinion, supplies the best bug.

If the winner also supplies a fix for the bug, we'll give a very special award. Bug reports should include all the details: what you were doing when you found it, what Finder was on the disk, what fonts and desk accessories were in the System and anything else you can think of.

Send your bug finds to **BUGS** *c/o MacUser, 25 West 39th Street, New York, NY 10018.*

DATABASE SHOOTOUT

Three Mac databases will take on IBM PC and UNIX DBs in a toe to toe slugfest at the Entity-Relationship Conference in Chicago on October 29th.

Vendors will demonstrate their products by showing how they handle a case study involving personnel data. Solutions will compete on data modeling (relational features), time to build the solution and query language.

If you're interested in powerful databases, contact Rodney P. Zimmerman at 415-838-6571 for more information.

MOUSE ROUNDUP

We lost a few mice in last month's MiniFinder section. We apologize for any confusion these errors might have caused. Here are the correct ratings:

***VideoWorks* is a 5-mouse program, not a 2. See the review in this issue to see why.**

And *ConcertWare* comes with more than 20 songs, not 200! (And you thought they'd discovered a new way of storing data.)

Miles Computing Entertainment Software. The Promise Fulfilled.

When the Macintosh first came out, everyone looked at it and said, "Wow, wait 'till the gaming wizards get ahold of this baby..." And some of them did. But some of the "quick and dirty" products that have appeared have left some entertainment software for the Mac a little disappointing.

Here at **Miles Computing**, software designers who simply will not put up with second best, or half-baked concepts, have delivered entertainment products of such intensity of effort and such depth that our designers say "Wow, wait 'till people get ahold of *this*..."



MacAttack! was the first, an amazing best-selling programming feat. It's a 3-dimensional tank battle zone simulation where you defend a city in your radar-equipped Sherman Tank. You must survive by out-manuevering conventional and heat-seeking missiles coming from your opponents who can only be eliminated by accurate shooting on your part. Deadly tanks and planes roam about in this unique game with three levels.



Harrier Strike Mission is follow-up to MacAttack! in a tour-de-force of Assembly language utilizing sensational 3-D graphics. This flight combat simulator features the famous Harrier Jump Jet, a fighter aircraft which can maneuver like a helicopter but has all the punch of the latest in modern jet armament. You are pitted against an enemy-occupied island firing heat-seekers, not to mention fighter aircraft in mid-air combat. You must take off from an aircraft carrier, take out the command post and fuel depot on the island and return to your ship. With two skill levels and your choice of day or night mission, mouse or joystick controls, it's the ultimate 3-D flight combat simulator.



Then there's **Fusillade**. You're the last person stuck on Planet Fusill, and must defend a city from power-hungry kamakazee looters in a fast-action shoot-out which escalates at dizzying speed as wave after wave attacks your position in over 30 knuckle-whitening levels. Mouse, keyboard or joystick controlled.



If real trouble is what you're looking for, **MacWars** has it. Miles Computing just can't keep away from 3-D, and this one has a black planet strewn with a deadly obstacle course of surface and sky targets through which you fly your laser cannon-equipped and shielded space ship. On the way to the enemy's planet-sized space station you must survive waves of enemy space paraphernalia, and only your mouse or joystick stand between you and destruction as the waves keep coming, and coming, making things "rather difficult indeed" for you.



For those who want to exercise brain muscles, we have **Overlords**. The object is galactic domination, with power struggles. Struggles against whom? Well, up to *32* players, that's who! Players can be either people or the Macintosh itself, or can even be linked up via Apple Computer's Apple Talk network, the very first game to do this. You can have multiple players on one computer, or link up to other computers, each player with its own strategy and personality. You can use the ships that come with it, over a dozen, or design your own, and by zooming in and out over the Galaxy, set out for high adventure.

Miles Computing Entertainment Software. The Promise Fulfilled.

Miles Computing, Inc., 21018 Osborne Street, Building 5, Canoga Park, California 91304. (818) 341-1411.

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THE BERKELEY MAC USER'S GROUP, 3,000 strong, is one of the country's largest. They even have an office in New York City! The group has grown so large, in part, as a result of an extraordinary bi-annual newsletter. Hundreds of pages long, it contains product reviews, programming help, news and features, and practical projects.

The Fall edition of the BMUG newsletter, hovering around 300 pages, includes two very interesting hardware projects. BMUGNET is an AppleTalk-compatible Local Area Network using ordinary phone cables. The project offers considerable savings in time and money.

The second BMUG hardware project is a speech digitizer. The newsletter gives complete instructions for building a D-to-A converter. A kit with printed circuit board and hard to find parts is available from BMUG for under $50. The BMUG newsletter is available to anyone for $15 a semester plus $2 postage.

Ode by a Mac

Although not exactly a new item, I just recently heard about an unusual Mac application. Called *Magical Poet*, it is a Mac that generates an original poem and creates a personalized greeting card from among 80 standard designs. The *Poet* generates a three-verse poem in limerick style built around the name and descriptions of the cards' recipient. The developer, Dwight Minkler of Phoenix, claims that the *Poet* will never generate the same poem twice, even given exactly the same information. Approximately 250 *Magical Poets* have been installed in greeting card shops around the country. For further information, call 1-800-422-POET.

MacChatter

Apple has been working internally on speech digitizing software for the Mac, and recently made the modules available to developers for inclusion in new programs. The software, called *MacinTalk*, combines small bits of sound called phonemes to generate words. Words that sound different from their spelling can be adjusted by hand. Sounds a little like *SmoothTalker*, and I'm told that the people at First Byte are none too happy about this.



CURT DOTY

From the Ground Up

Several small developers I have spoken with recently are taking a consumer-oriented approach to their products. Working basically from their homes, they believe their best chance for success is to provide well-made, specific-use products at very reasonable prices and support them better than anyone else. Many of these developers came out of Apple, or from an Apple II background, and they remember that Apple used to have this approach. (Anyone listening, Cupertino?)

Lauryn Jones and Diane Hunter, former product managers in the Mac team at Apple, started Assimilation (formerly Assimilation Process) with an idea for software that would connect Mac to daisy wheel printers. Too small for internal development, the *Mac•DaisyWheel Connection* became their first product. (Diane constructed the cable that was packaged with the software.) The two have kept good relations with Apple, and often use Apple resources for product development.

Lauryn and Diane have set their niche as utilities and peripherals that will help open up the Mac. *Mac•Tracks* adds macros to Mac operations, and *Work•n•Print*, their newest product, is a print spooler. They also package a parallel port, and plan a MIDI connector.

Marilyn Afana was a CPA. She became annoyed that nobody had accounting software that worked the way she did, so she decided to do it herself. She designed the software and assembled a team to program it. She decided to use the Mac as a base because of its interface and the fact that the market was not yet flooded with Mac accounting products. Her product, called *Strictly Business*, is a modular accounting system for small and large businesses. It has been used to help sell Macs in Japan because it is one of the few products that can handle the large values required when working in yen. Marilyn incorporated *SmoothTalker* into her program, so error messages and other minor features are spoken.

Charlie Jackson of Silicon Beach Software will continue to focus on games (*Airborne*) and utilities (*Accessory Pak 1*). A new product called *PowerPrint* is used to create items like custom labels and 3 X 5 cards, using both text and graphics. A *Conan*-like game with digitized sound is planned for around Christmas. Charlie says that the digitized sound used in Silicon Beach games will also be incorporated into several educational programs in development. I for one would love to see a computer that talks back to kids!

Easy, They Say

I can't wait to see the new program from Arrays/Continental/Haba (recently merg-



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ed as Arrays). Tentatively called *Relax*, it is a disk-based relational database manager for individual and small business use — and runs in 128K!

First Byte, the *SmoothTalker* people mentioned above, are also working on educational programs with speech capabilities, and should be able to bring them to market before other developers who use *MacinTalk*. Perhaps talking programs will mark the first step toward intelligent educational software.

Quit Complaining

Dan Feldman, coauthor of BrainPower's excellent *StatView* statistics package, is tired of hearing developers complain about how difficult it is to program Mac. Dan is one of the fortunate Mac developers who caught the programming fever directly from Mac, rather than transferring preconceived notions of coding from another system. He likes the challenge of getting down to the heart of the system and working with all the tools Mac has available.

Dan and his partner Jim Gagnon are busily working on a 512K version of *StatView*. The current edition is a very useful tool, especially for students and academics, but the new improved program will be a full-blown professional statistics package.

Industrial Strength Outlining

Living VideoText is developing an add-on program for *Think Tank 512* that will automatically structure an outline to one of several standard outline formats. Selecting a format from a new menu added to the *ThinkTank* screen will automatically number heads, subheads and notations as they are generated. This feature will be especially useful for medical or law students (and practitioners), or anyone preparing a doctoral dissertation or professional thesis. (I suppose writers could use it too, but I know very few who ever bother to outline.)

In the Laboratory (shhh!)

—Beta versions of multitasking software for the Mac have been seen alive and running in a secret location in Berkeley.

—Mac-controlled video production systems that take a project from conception to storyboard to color animation, taping and post production have been observed in California.

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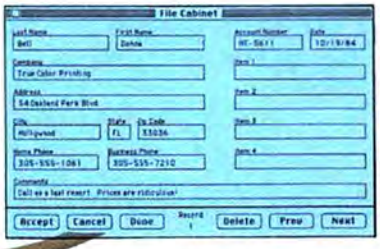
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THE GÜTENBERG MAC

HERE WE ARE IN THE OFFICES OF Congressman Bill Stump. Bill has just returned from a whirlwind factfinding tour of southern France where he conducted feasibility studies on importing prefabricated sections of highway to repair the Triborough Bridge. Bill's press secretary thinks all of his constituency should know about this remarkable plan which is due to come before the House Appropriations Committee in about twelve years. An informative release has been written complete with pictures of Bill and a prominent French actress, both wearing hard hats at the actress' pool in Marseilles.

The copy goes to a writer to add a little spice to the article and then goes to Bill's production department. It is laid out on boards. Type and headlines are set and the whole thing is pasted up in the studio. The press secretary looks everything over and remembers that Bill is due to appear before a Senate subcommittee to report on moped emissions. This is a very important issue and must be included too. Back to the writer, then to the studio and the typesetter, and back again for approval. The secretary gives it a once-over and it goes to the printer. The job is done and out go thousands of valuable newsletters telling voters how lucky they are to have Bill Stump fighting for them.

The whole process has taken two weeks and the mailing is on schedule and everybody is happy. What a guy, Bill Stump! But what's this got to do with the Macintosh?

The whole job could have been done in one day with a LaserWriter and any one of the electronic page makeup programs now available for the Mac. Composition involves the laying out of a printed page and sizing of type and pictures so that everything fits and, at the same time, is esthetically pleasing to the eye. In most cases it is laboriously done by hand because, in the type composition industry, one of the most expensive services is electronic page makeup. Most studios simply don't use it. Yet a Macintosh on an AppleTalk network connected to a LaserWriter and running *Page Maker* by Aldus or *Ready Set Go* by Manhattan Graphics or *Just Text* by Knowledge Engineering can



do it. *Ready Set Go*, for instance, can prepare 32 pages at a time.

The pagination software alone for the well-known Linotron 404 costs a whopping $20,000 and the system itself costs about $300,000. Fortunately the company provides a two-week seminar to teach operators how to use it. Compare those prices with the Macintosh, LaserWriter and, say *PageMaker*, the most expensive of the lot at $495. Whew!

Here is another enormous vertical market the Mac has carved for itself in less than two years.

This is not to say that LaserWriter output is any match for the Linotron's; it isn't. But it wasn't intended to create display type or galleys for books. The equipment that now does most of the typesetting for printed matter has been around for ten years and more. It is sophisticated and powerful but has not benefitted from the microcomputer revolution. Type shops are generally configured with single and multiuser minicomputers or larger numbers of terminals linked to mainframes.

In the realm of composition where ultra-high quality is not a premium, the Macintosh and LaserWriter combination are a truly formidable duo. Most of the printed matter that you see does not require resolution of 2,400 dots per inch. This includes flyers, brochures, internal corporate communications, newsletters, community newspapers, manuals and most government printing.

Here's a whole new industry in Mac users' laps for well under $10,000.

Ultra Mac

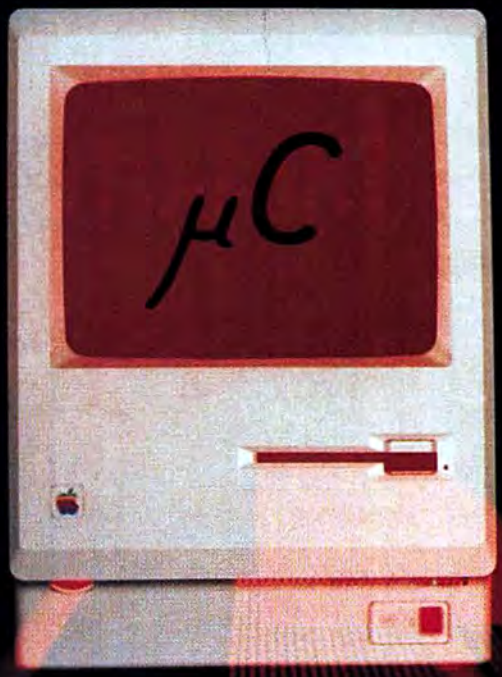
As applications like page makeup appear for the Macintosh, the system's limitations define themselves more clearly and are being addressed. Memory was once the battle cry of the IBM sales and marketing crew. Apple answered with a 512K Mac and made an upgrade available to 128K owners, originally for $999 and now for $599.

This brought the Mac into a competitive position and gave software developers a much richer environment in which to work. The price to the consumer—$1.60 per kilobyte. This is the price of a 512K upgrade from an authorized Apple dealer. But this is expensive. The price has come down since third party developers have gone to work. A 128K owner can now upgrade to 512K for a mere 60 cents per kilobyte, $229 versus $599. And it doesn't end there. Reliable 1-, 2- and 4-megabyte upgrades are also available at indexes averaging $1.20 per K, and you can upgrade your 128K Mac to a full megabyte for about $1.00 per kilobyte. The Mac's present and intended ROM will address up to 4 megabytes! Try that on for size. Reports are that it does wonders for sluggish programs like *Jazz*.

A Last Note For Adventurers

Piracy is no longer associated with Errol Flynn. This is 1985 and it is stealing. While the postures taken by companies like Lotus and Microsoft seem more like a challenge to hackers than an appeal to ethics, consider the little guys. If everybody knocks off their products such companies will cease to exist and all the work they put in goes for naught. As one manufacturer puts it "Would you go into a store and steal software off the shelf?" Piracy is the same thing.

BERT MONROY



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Inside every Macintosh™ beats the heart of a superb machine, and the feats it can perform when given the room to maneuver will astound you. However, the sad fact is, most Mac's will never be allowed enough RAM to run the major integrated software packages wholly from memory - at lightning speed. Nor will they know the wonder of running eight applications essentially simultaneously in Switcher. Nor will they see giant spread sheets or documents. But yours can.

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by Doug Clapp

MAYBE CODE IS THE EASY PART

SO I CALL UP STEVE JASIK.

This guy's gotten a lot of press lately, and he's about to get more here. He wrote *MacNosy*, a "decompiler" for Macintosh programs.

Here's what it does: It turns any old Macintosh program into source code: an assembly language listing. *Nosy* produces the actual program assembly code — or something that's very close to it. It takes binary, compiled program code and produces "human readable format." The stuff you're not supposed to see.

If you don't understand assembly language, of course, it might as well produce Sanskrit. If you do understand assembly language, the feeling is akin to slowly disrobing your favorite fantasy figure.

You not only see how programs are written, you see *how well* programs are written: Who writes good stuff. And who doesn't.

To digress for a second . . . Microsoft writes good code. Let *Nosy* crank away on Microsoft *Word* a few minutes and you'll see code that's clean, polished, and was thoroughly thought through, "spec'ed out," before a line of code was produced. Microsoft writes good stuff.

So, okay. It's possible to turn compiled programs into assembly language listings. Or even to go a step further (as *Nosy* does) and "decompile" the programs to break out procedures and other nerdy stuff.

Yawn.

But there's more. Jasik talks about a project to turn binary program listings into Ada. Into Ada! "Very do-able," he says. We're not talking about "disassembling" anymore. Disassembling "brings up" the code one level of comprehension. We're talking now about bringing the code all. The. Way. Up.

If you can convert code to Ada, you can certainly convert it to C, or Pascal, or even Basic listings!

And let's say it's already done. I've got the program that does it. I can now take *OverVUE* or *ThinkTank* or *Filevision* or Microsoft *Word* or *Sargon III* or even *Mind Prober* (heh heh) and turn each program into crisp, clear, program listings. Maybe Pascal listings; they're reasonably straightforward.

When I get done, I think I'll copy the disk with the program listings and pass them out at the next user group meeting. Then, of course, the members, with disks clutched in their hands, can scurry home, fire up their Pascal compilers, compile the listings and Voila!

Maybe that's no big deal. That's only piracy, possibly. But other software manufacturers can do the same thing. And use the results to steal precious code, tricky routines, and subtle features.

How would you like to spend several million dollars producing *Jazz,* then find your source code in the hands of your competitors, and everyone else?



BART GOLDMAN

Maybe this will lower the price of software. Or maybe it will merely discourage development of innovative, complex software. Or maybe life will go on, despite the *Nosys* and the *NextNosys*.

Or maybe code, after all, is the easy part. I just finished creating a Macintosh application. My creating a Mac program is equivalant to Helen Keller winning the Indy 500.

Anyway, the code was the easy part. Algorithms are cheap. The bookstores are full of books full of algorithms. So are libraries. Want the fastest algorithm for sorting? Or for creating a "hash table" to find an entry in a list? Or for writing a screen full of information remarkably fast? Easy. Go look it up. Buy Don Knuth's marvelous set of books on programming. Algorithms are cheap.

The hard part is the conception. What's the program do? What do people need that they don't have? What's useful? What would people pay real money for? What hasn't been done?

That's the hard part.

And you're still only part way there. After "What's it do?" comes "How's it do it?" What's the program flow? What things need be done first? After that, what comes next? How much control does the user have, and where do they have it?

Along with those decisions come "looks." What are the commands? And how are commands given? From menus? From dialog boxes? Which should go where? Maybe an incredibly sloppy "Everything on the menus," á la Tardis *FastFinder* is the way to go. Maybe not. Maybe the program should nag you constantly with dialog boxes, á la *MacTerminal*, which lets you know when it's dialing, when it's hanging up, and when it's quitting with (horrors!) *changes made to the settings*!

Of all the bum Macintosh raps, the bummest is this: that the Macintosh is difficult to program. Uh uh. The Macintosh is easy to program. The ROM routines save — not cost — programmer's time. Macintosh makes coding easy. Look what the mainframe boys at Telos did when presented with a few Macs. After mainframes and minis, Mac was easy. Zip, zip, zip: *Filevision*. Thanks for the ROMs.

What Macintosh requires of programmers and designers is thought. Raw thinking. Never easy. The easy way is to present the unwary with a ">" prompt and hope they read the manual. The hard way is deciding what's in the dialogs, what's on the menus, and what gets "dimmed" where.

As always, making things look simple is the hard part.

Go get'em, Steve Jasik. The world has nothing to fear from you.

If there's a twisted, doubled-back, contradictory irony in this spiel, it's this: of every Macintosh program in existence, the very worst user interface — mind you, the *very worst* — is the *MacNosy* user interface. The worst. And I would have paid double *Nosy*'s $60-some dollar price.

Think what it'd be worth with a menu bar.

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QUICK

OMNIS 3



List Price: $495.00. Requires 512K. Printer and external drive recommended. Published by Organizational Software Corporation, Suite 150, 2655 Campus Drive, San Mateo, CA 94403. (415) 571-0222.

THE *OMNIS 3* RELATIONAL/HIERARCHICAL DATAbase system is designed for development of vertical applications systems, such as job costing, accounting, inventory tracking or any other application that requires user access to multiple files. Up to twelve files may be open at a time, while the program is capable of handling 24 file formats per data file.

Among the features included are user defined pull-down menus, command buttons and messages, preconfigured command sequences for automated procedures, password security, array processing of data, mail-merge function with access to Macintosh fonts and date calculation capabilities.

Reports are user defined, allowing up to 9600 fields and 60 calculated fields per report layout.

Data files created in *Omnis 2*, a single file program, are upwardly compatible with *Omnis 3*. The structure of an *Omnis 3* database may be modified after data is entered and stored, providing maximum flexibility.

Omnis 3 can generate and read standard DIF (Data Interchange Format) files, SYLK files (Symbolic Linking), delimited format and text files. A multiuser version of *Omnis 3* is also available for the AppleTalk network and Corvus' OmniNet Network.

The program comes complete with four working examples, including Personnel Management, Accounts Receivable, Inventory Control and Job Costing. These files demonstrate everything from user-defined menus to custom help menus and screens, and they can be treated as primitive examples to be built upon.

Omnis 3 can be installed on a hard disk: the user will be required to insert the master disk three or four times a month as a key.

The documentation is very clear and complete, although one thing is obvious: users with experience in database design will have no problem learning the program, while first time databasers will be overwhelmed by the capabilities available. This program is not for the meek.—*DB*

THE GREAT INTERNATIONAL PAPER AIRPLANE CONSTRUCTION KIT



List Price: $39.95 Requires 128K and printer. External drive recommended. Published by Computer Software Division of Simon and Schuster, Inc., 1230 Avenue of the Americas, New York, NY 10020.

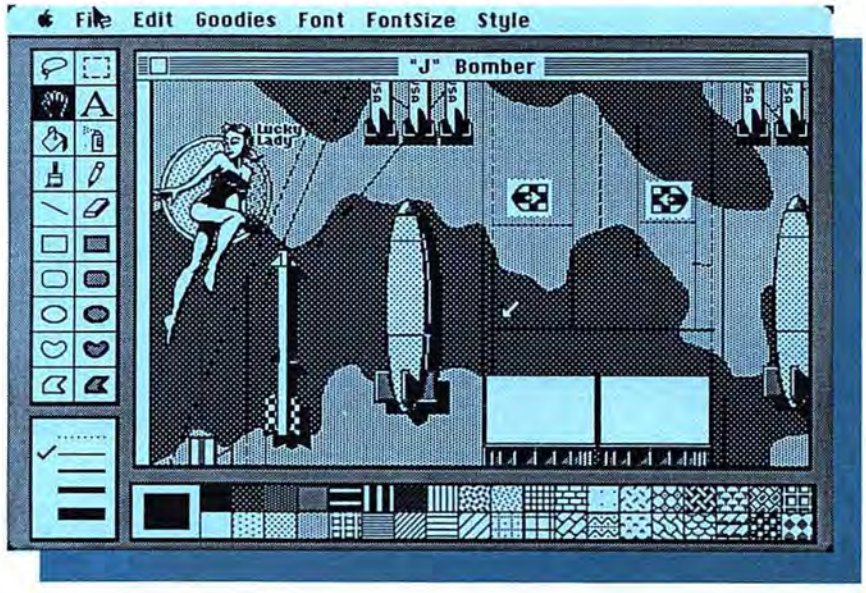
THE GREAT INTERNATIONAL PAPER AIRPLANE CONstruction Kit lets *MacPaint* users create customized versions of some of the world's best paper airplanes. The kit consists of a disk of *MacPaint* files with basic designs and decorations for custom aircraft, including wings, tails, assorted hardware and armament. The designs are reprinted from *The Great International Paper Airplane Construction Book*. The manual explains the procedure, from decoration to actual assembly used to create a personalized masterpiece.

Before creating a plane, one of the sixteen designs must be selected as a template. Printouts of the illustration files in the back of the manual serve as guidelines. Users may put the designs provided on the plane or create designs of their own. Once suitable pictures have been located, the pictures are selected using the marquee tool and copied into the Scrapbook using the standard cut and paste techniques. (Remember to *not* save changes to the design files since the files will be of more use later if left intact.) This process is repeated until all the art needed to complete the plane has been collected in the Scrapbook.

The pictures in the Scrapbook are now pasted onto the plane template. The design already has folding lines to use as a guideline for assembly. It is unwise to cover these lines with illustrations since the lines must be visible when folding the plane. When the decoration process is finished, the plane is printed.

Fold the plane by following the instructions in the book and the dashed lines. All that remains is to find friendly airspace and let your imagination soar.

Since the drawings are *MacPaint* files *The Great International Paper Airplane Construction Kit* is easy to use. The documentation is elaborate. It includes explanations and hints for every step and in the back of the book there are



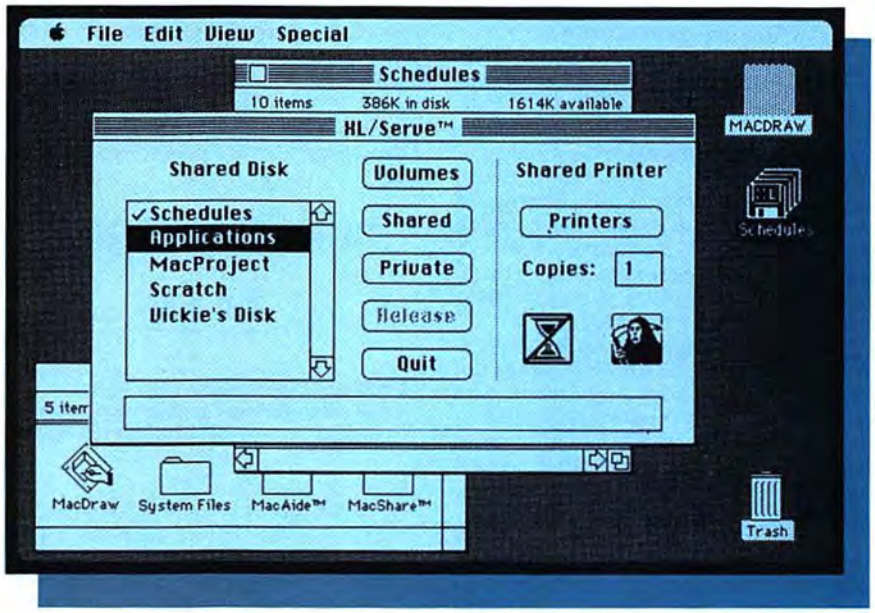
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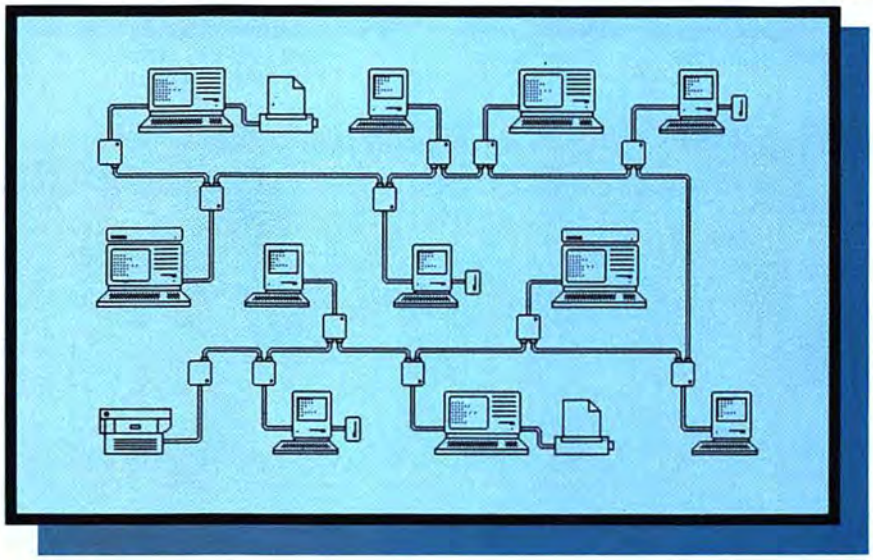
pictures of some finished plane designs and short descriptions of the flight characteristics of each.

In our rush, rush, rush society people don't relax and let stress and tensions build. This program provides a fun way to relax during slow moments in the day. At home children of all ages can occupy themselves for hours building planes and with a Mac creating a plane is half the fun.—*Gilbert Rankin*

XL/SERVE

List price: $195. Requires Mac XL and *MacWorks 3.0*. Published by Infosphere, Inc., 4730 SW Macadam Ave., Portland, OR 97201. (503) 226-3620.





XL/Serve makes a Mac XL the key player in an AppleTalk network. This program, which runs under *MacWorks*, turns the XL into an effective volume and print server.

The volume server feature allows AppleTalk users to access any one of up to sixteen volumes. Each volume can be password protected so that critical data can be protected. Volume partitions are adjustable by the manager function. File storage is efficient with allocation block sizes ranging from 2 to 8K, depending on the volume size.

The print serving feature allows all the users on the network to speed up their printing. When a print command is issued, the document is rapidly sent to the print buffer established by *XL/Serve* and the sending unit is immediately released. Users no longer have to wait for printing to end before they can start working again. *XL/Serve* then prints the document without further user involvement.

The Mac XL that is the base for all of this activity remains fully useable. *XL/Serve*'s operations are transparent to the XL operator. *XL/Serve* seems to make fewer demands on the system than other file (volume) servers.

The program is well documented and has on-screen help. It is easy to install and use. Each user installs the *XL/Serve* driver as a desk accessory so calling and changing volumes is simple.

There are a few bugs. Word spacing when the print spooler is producing output is not always correct or attractive. This flaw is as much a fault of *MacWrite* as it is of this program. The print spooler does not support the LaserWriter. However, since users are on AppleTalk, they can address the LaserWriter directly.

Among the most useful features are print spooling and incremental saving of files. The incremental saving feature keeps track of when files were last backed up and only copies changed files when a backup is made. This feature is a real time saver.

Users must be sure to have *MacWorks 3.0*. *XL/Serve* will refuse to even load with earlier versions. The publisher is aware of this problem and a fix should be available by the time you read this.

XL/Serve should be high on the buy list of every AppleTalk network that has a Mac XL. It is an excellent product.—*Dennis Brothers & SB*

QUICKCLICKS

GATO



List price: $39.95. Requires 128K. Published by Spectrum Holobyte, Inc., 1050 Walnut St., Suite 325, Boulder, CO 80302.

RADAR REPORT! THREE OBJECTS ON SCOPE, nearest 990 units, speed 15 knots, course 180°!

Up periscope! Enemy destroyer!! Dive! Dive!

You're in command of USS *Growler* (SS215), a World War II fleet submarine of the *Gato* class in this exciting simulation game. Your decisions determine your vessel's success and survival. The Pacific Ocean in 1943 was a dangerous place to hunt!

Gato uses every bit of the Mac's graphic and computing power. The screen displays are numerous and complete and the action, as viewed from the bridge or through the attack periscope, is remarkably realistic. Players can set their own level of difficulty of the game and the relative strength of both the sub and the enemy ships.

Each mission begins with a message in Morse code, which the sub's radio operator can translate even if it is so many dits and dahs to you. Set the speed and course and head off into the broad Pacific. You may have been ordered to rescue a downed pilot, or sink a freighter carrying vital new radar gear, or any one of eighteen other missions that are included. And if those twenty pale, you can create and store up to ten missions of your own.

Some missions have a time limit while others last until they are accomplished or you are sunk. Playing a mission to completion in one session is not required. Players can pause a game in progress, or save the current position for a future session. The "suspend" feature is particularly valuable if you have to stop for a moment during one of the time-limited missions. Up to five games can be saved to disk.

There's plenty of on-screen help, some history, and a Morse code tutorial (actually, just a chart of the code). Sub commanders can get a report on how many missions they have successfully completed and a report listing the name, size and date sunk of all victims.

Gato is engrossing; players must pay attention to all the information their eyes and instruments supply. That's not enough. A successful captain must know, or more likely learn the hard way, what good sub tactics are and what their opponents are likely to do. And although luck doesn't play a big part in this game, it sure helps to be lucky!

The basic training in the manual will serve you well. This is one Mac game where you should read the manual before you start to play.

This first real simulation game for the Mac sets a high standard for those to come. We can look forward...Excuse me, a fat tanker just came into my view on my periscope. Full speed ahead! Open forward torpedo tube doors! . . . —*SB*

CONCERTWARE +



List Price: $69.95. Requires 128K. External drive recommended. Published by Great Wave Software PO Box 5847, Stanford, CA 94305. (415) 325-2202.

WHEN WE REVIEWED *CONCERTWARE* IN OUR premier issue, we found room for improvement. *ConcertWare+* maintains the format of the original program but adds many new features. Great Wave Software is definitely listening to the feedback provided by users of the original version.

The most exciting new feature of the Writer module is that it can accept timed entry through the Macintosh keyboard. A piano-style keyboard is set up on the Mac keyboard, so that when the user plays the keyboard, musical notation with correct timing information is automatically generated on the screen in real time. Triplets are now also permitted.

A practice mode in the Writer module permits playing the entered score without using the Player module, and also allows playback to start at any point in the score. Different sounds may be loaded from disk and assigned to voices while in the Writer. Instrument insertions are programmable, so that voices may change instruments independently while playing back; up to eight voices can be maintained in memory concurrently.

Many exotic sounds can be created with the improved Instrument Maker module. Users have extended control over the vibrato, including the ability to assign vibrato to different parts of the envelope (the vibrato kicks in on the decay and release of the sound), along with variable rate and amplitude settings.

A FatBits-like mode allows easy vibrato waveform editing. Various default settings include sine, square and random waveforms. The Writer can also load preconfigured settings from existing instruments (including the waveform, envelope, vibrato and icons). With a little experimentation, composite instruments (a cross between a violin and an electric piano?) can be constructed quite easily.

ConcertWare+ is an improvement on an already good piece of software; now it's excellent.—*DB*

FINANCIAL COOKBOOK

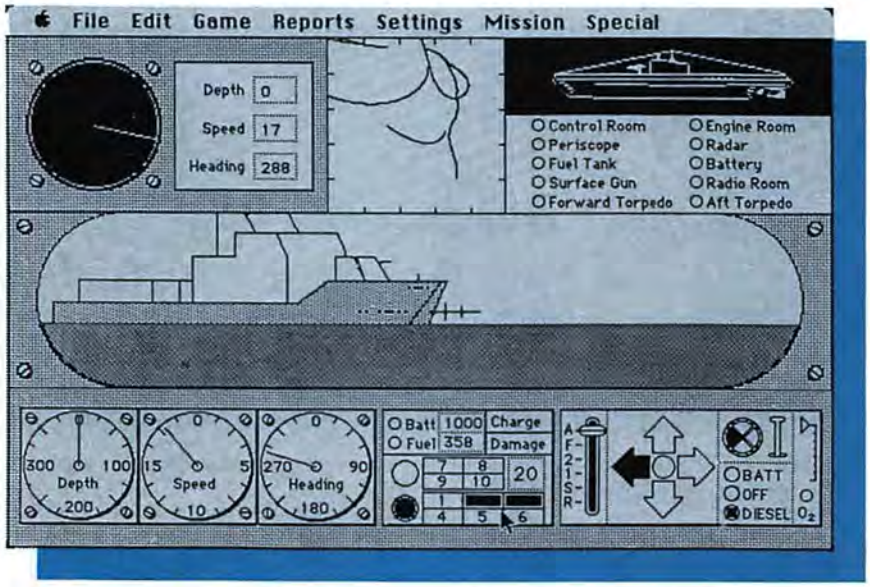


List Price: $49.95. Published by Electronic Arts, 2755 Campus Drive, San Mateo, CA 94403. (415) 571-7171.

THIS FINANCIAL FACTFINDER AIDS USERS IN CONSTRUCTing various "what-if" formulas that can be used as a basis for financial decisions. Thirty-two different "recipes" are included on disk, including *Single Savings Deposits, Monthly Savings Deposits, Deposit Needed for Future Purchase, Living on Your Savings, An IRA's Future Value, How Much Life Insurance You Need, Mortgage Schedule Yearly, Mortgage Schedule Monthly, Mortgages With Balloons, Buying Vs. Renting a Home, Energy Saving Devices* and *Owning Your Car*. If you don't already own a program that allows you to easily input variable data to figure out, say, the monthly payments on a mortgage if the interest rate goes up or down, this program will prove a handy tool for quick calculations.

Users choose from a menu listing of different recipes to use. If you picked *Monthly Savings Deposits*, the program would ask you to type in the monthly deposit amount, the number of years you'll be depositing the cash, the interest rate earned, compounding periods, your marginal tax rate and the inflation rate. From this, it will produce an itemized display of the yearly balances, including tax paid, current balance and buying power adjusted for inflation.

After testing the program for an hour or so, this



reviewer found it to be both informative and entertaining. First, we found that in our financial circumstances it was better to buy a home than rent. Then, to our amazement, we calculated the monthly costs of a mortgage, using several different interest rates, and found that we could actually afford The American Dream — if interest rates dropped a mere half point.

The instruction manual is well-written, including a glossary of financial terms. The manual also explains in detail the mathematical calculations the computer uses to figure out each recipe, an interesting bit of trivia for mathmongers. The program doesn't integrate data from one recipe to another; to apply the findings from one session to a different recipe, you'll have to either remember the numbers in question, or read them from a saved file or a hard copy.

If you already own a program that lets you figure financial variables, or have access to one through a bank-by-computer account, *Financial Cookbook* would probably be a useless duplication. But if you've been looking for a simple to use way to make financial calculations, look no further. Just add your own numbers and stir.—*TFH*

ACCESSORY PAK 1 PAINT CUTTER

List Price: $39.95. Published by Silicon Beach Software, Inc., PO Box 261430, San Diego, CA 92126. (619) 695-6956.

SILICON BEACH SOFTWARE'S ACCESSORY PAK 1 IS A FULL set of "wish list" utilities that will appeal to anyone who regularly uses *MacPaint*. The disk includes the *Paint Cutter* utility program and a selection of desk accessories, including "Rulers," "Coordinates," and "QuickEject."

Paint Cutter allows full page editing of paint files; users are no longer constrained to *MacPaint's* small active window. Up to four *MacPaint* documents can reside concurrently in memory on a 512K Macintosh (only one document on a 128K Mac). Switching between documents on the 512K Mac seems almost instantaneous.

A selector that scrolls beyond the active *MacPaint* window will cut or copy up to the entire *MacPaint* page to either the clipboard, or directly into the Scrapbook (without explicitly invoking the Scrapbook). The selection may then be pasted into any application that works with the Clipboard.

If the selected area is too large to cut or copy, the program will specify the percentage over and prompt the user to repeat the procedure. Any selected area can be inverted, rotated or flipped horizontally or vertically. Vertical selections of up to 8 inches can be rotated without truncation.

The Coordinates menu selection displays the location of the cursor on the screen, and also the size of the area selected in inches, centimeters or pixels. The origin can either be set at the upper left hand side of the screen, or at any point on the screen.

The menu bar can be hidden with a double-click, so that the screen is dedicated entirely to the document being edited. The cursor can be transformed into the Grabber (Hand) by hitting and holding the space bar to scroll the page around.

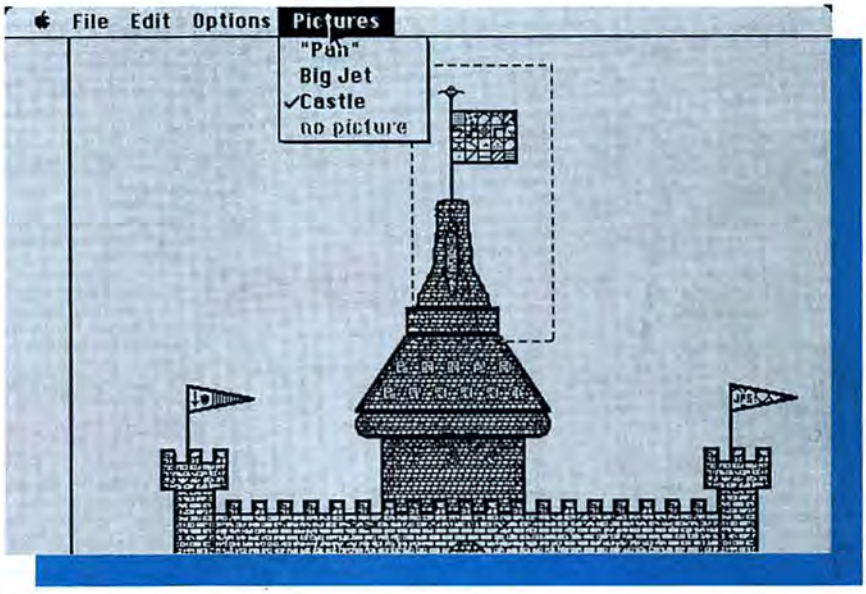
Some of *Paint Cutter's* features include the ability to create a Startup screen from any *MacPaint* document, full printing capabilities (Draft, High Quality, 50% reduction), compatibility with *Switcher* (optimum memory allocation: 244K for one document, 344K for two documents), compatibility with Macintosh XL, including increased document loading capabilities (up to eight documents with a 1-megabyte Mac XL) and full screen utilization.

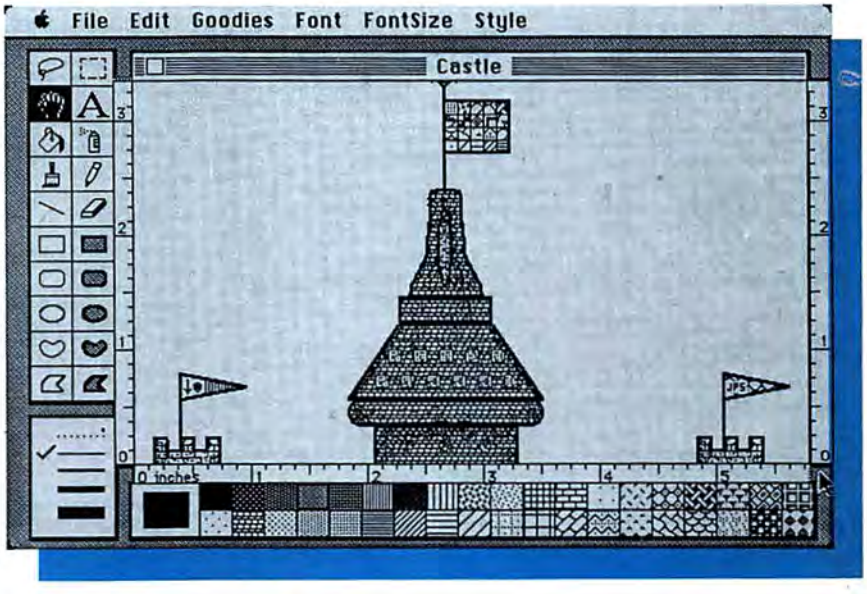
Accessory Pak 1 also includes a "Rulers" desk accessory that places horizontal and vertical rulers on the borders of the *MacPaint* active window. These rulers have real time trackers, much like *MacDraw*, and can be adjusted to display in inches, centimeters or pixels.

The "Coordinates" desk accessory works within most Mac applications, and will display the position of the cursor at the upper right side of the menu bar. It also can be adjusted to display inches, centimeters or pixels.

The "Screen Saver" program will protect the Mac screen against phosphor burn-in (due to long periods of inactivity) by blanking the screen and displaying a bouncing Mac until the mouse button is depressed; the program can be set for variable delay, activating after a user-specified amount of time. "QuickEject" will eject all disks in drives and will reboot the computer from within any application.

The quality of the software is exceptional. *Paint Cutter* is a must buy for all graphics enthusiasts. The rest of the disk? A deal any way you look at it.—*DB*





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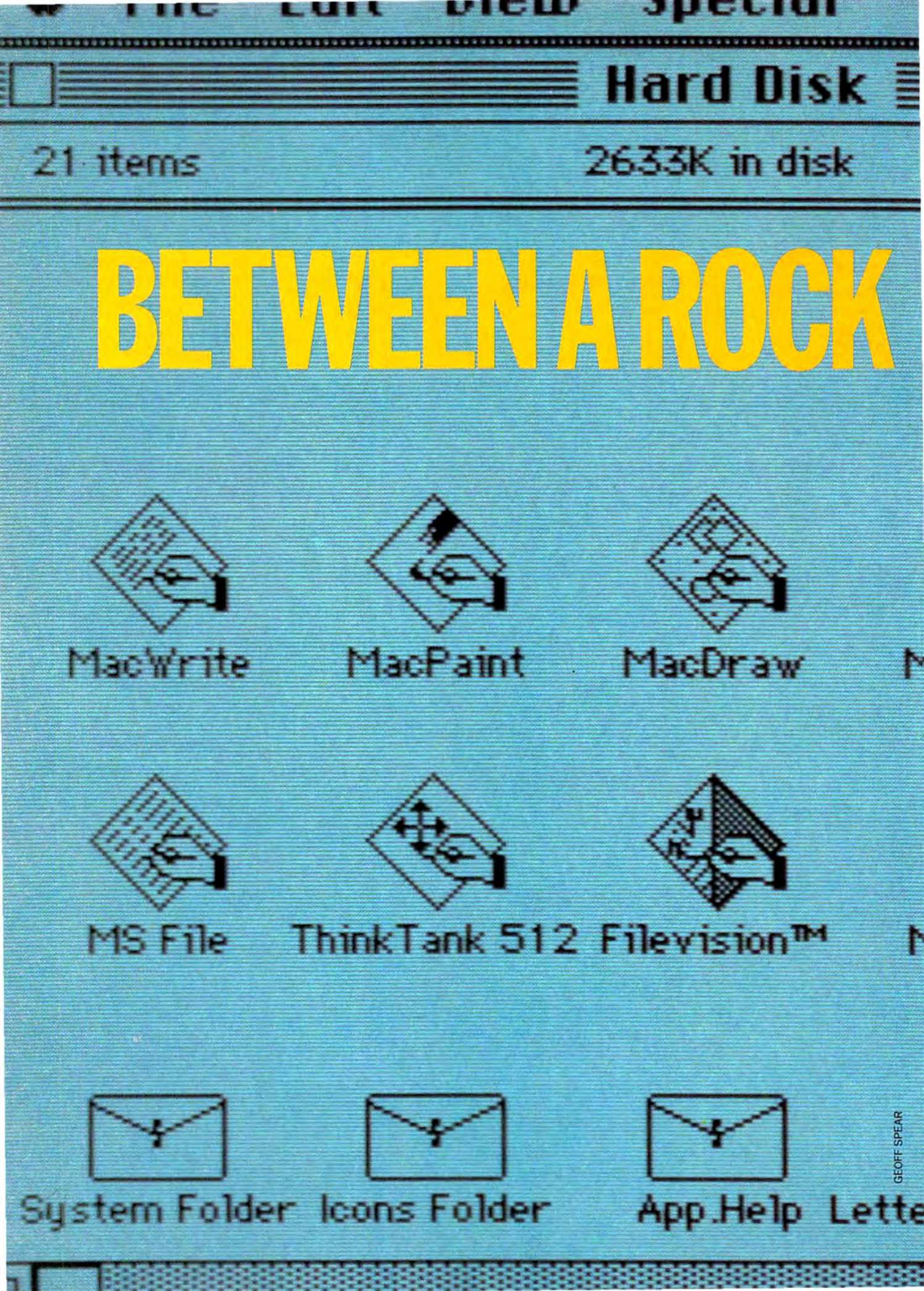
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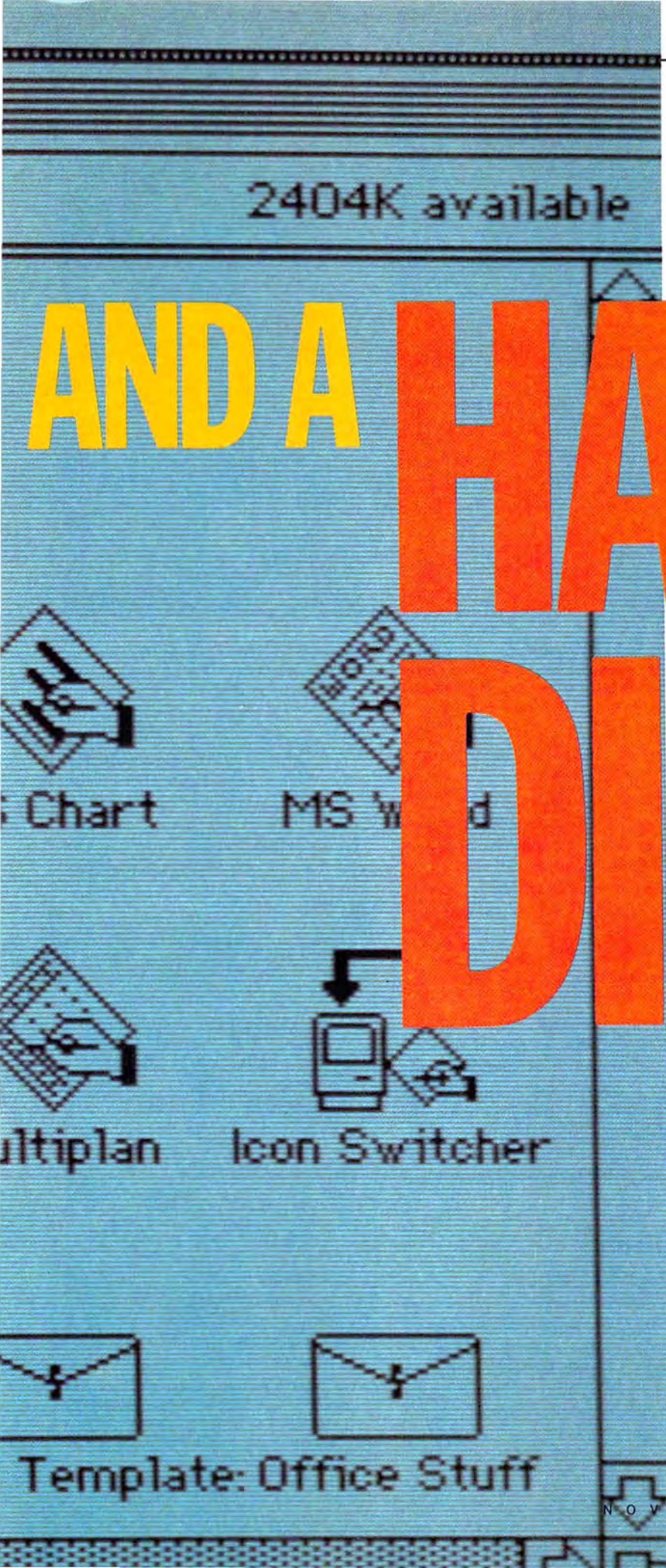
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AND A HARD DISK

Faster than a speeding bullet; more powerful than a locomotive; able to leap stacks of floppies with a single click . . .

by Richard Herbst

BETWEEN A ROCK AND A HARD DISK

SPEED KILLS. IT ALSO ADDICTS. Place a user in front of a Mac equipped with a hard disk and listen for the squeals associated with birthday presents being opened, Christmas morning ecstasies and other sounds of delight. For many it creates an instantaneous bond of love between man and machine that *cannot* be broken. If you deal with large amounts of data and if rapid deployment sounds appealing, you are a likely candidate for such a union.

Genesis

In tracking the development of hard disks for the Macintosh we are talking about a time frame of only two years. "First-generation" hard disks like Corvus' *OmniDrive*, Tecmar's first *MacDrive* and the Davong *MacDisk* are so called because of the nature of their interface with the Macintosh. "Second-generation" systems have more sophisticated interfaces that are better designed to complement the Macintosh environment.

Problem: System Restraints

First generation systems initially had to deal with the limitations of Apple's early Finder, which would handle only 128 files per drive. This is not an unreasonable number if the drive is a 400K floppy. But the drives were generally 5 or 10 megabytes (1 megabyte = 1,024K), and 128 files accumulated in no time at all. Tecmar, in writing its controlling software, luxuriously allocated files in increments of 20K, i.e., a 3K file on a floppy disk opened as a 20K file on the *MacDrive*. Transferring 15 or 20 files from floppy to hard disk gobbled up vast amounts of space.

Solution: Software

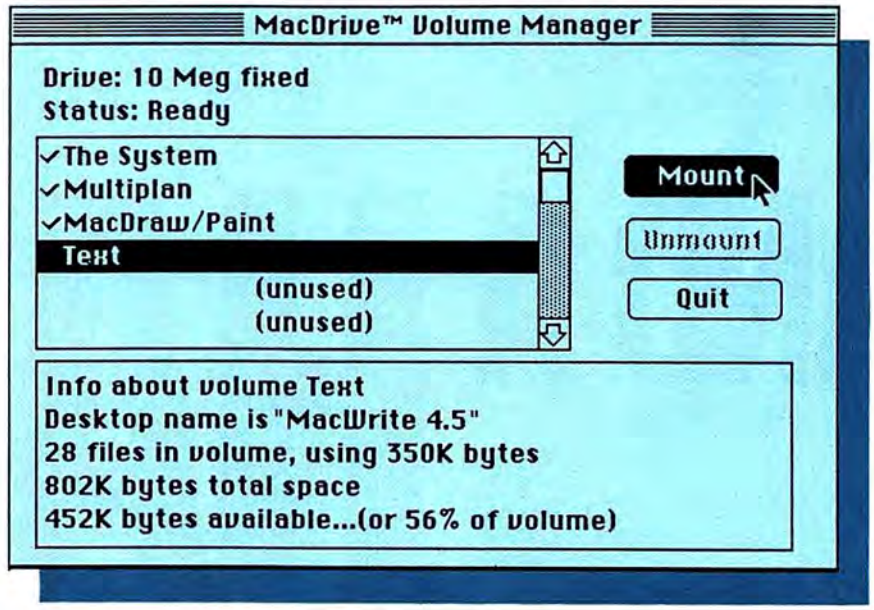
The first change to occur was the development of *volumizing software*. The hard disk could now be partitioned into smaller multiple volumes or drawers, each recognized by the Finder as a discrete drive and able to handle the Finder's limit of 128 files. This also helped organize the desktop to the user's needs. Every hard disk manufacturer now offers volumizing software of one kind or another.

The size of incremental blocks came down as well. The minimum size for most systems is now 2K, and some, such as Corvus' *OmniDrive*, are 1K. More changes. Applications for volume management were written which could create from 20 to 32 volumes on disk. Several companies, notably Micro-Design and General Computer, designed volume managers as desk accessories so that volumes could be mounted or quit from any desktop without returning to the startup volume and opening the manager application. By more closely following the Macintosh user interface, disk management became more intuitive.

Problem: Where To Put It

One of the guiding philosophies in the design of the Macintosh was the bundled component approach. As much of the system as possible was kept inside the box. The total aspect of the computer was kept as low as possible, the only exception being the external disk drive. A quick look at the majority of hard disks shows them to be larger and heavier than the Macintosh itself.

Four companies have addressed the problem of space. The *Paradise Hard*



Significant differences in performance of a hard disk are a reflection of the software controlling the drive. Most systems use a separate application for volume managing. To mount or unmount a volume it is necessary to return to the startup volume where the manager application is installed. Tecmar's manager allows up to four volumes on the desktop at a time.



Second generation hard disks have the volume manager installed as a Desk Accessory making the manager transparent to the user during applications and available from any desktop. *HyperDrive*'s manager allows a full menu of icons on the desktop at a time.

Disk offers a small box about half the width of the Mac and slightly less than the Mac's depth. If you disregard the external power supply required for the Paradise which adds a second component, it's a nice design. PCPC's *MacBottom* is two inches thick and resides underneath the computer. Apple is introducing a low profile design in November. The boldest approach, however, is the *HyperDrive*. General Computer decided that the place for a hard disk was inside the Mac. Judging by the wide acceptance of this unit, GCC has made its point.

Problem: Waiting For The Imagewriter

When it's time for a document to be printed, the ImageWriter receives two lines at a time from the Mac in high quality mode, about half a page at a time in standard mode. It prints continuously because a 2K buffer holds the file or portion thereof. This ties up the computer for as long as it takes to print out the entire document. If only the document could be stored somewhere besides the Mac and sent to the printer, freeing the machine for other tasks. . . .

Print Spooling

Some hard disks have a portion of the media surface set aside for creating temporary files intended for the printer. This buffer area varies in different systems: Tecmar's is 150K; the *Bernoulli Box* can spool up to 250K; the *MacBottom*'s is 200K. The *HyperDrive 20* also has a buffer.

Once a file is sent to the printer, it is spooled onto the hard disk and sent from there. Since the spooling area on the disks is relatively large, quite a number of documents can be queued up for printing. The Macintosh is now free to quit the application and begin another.

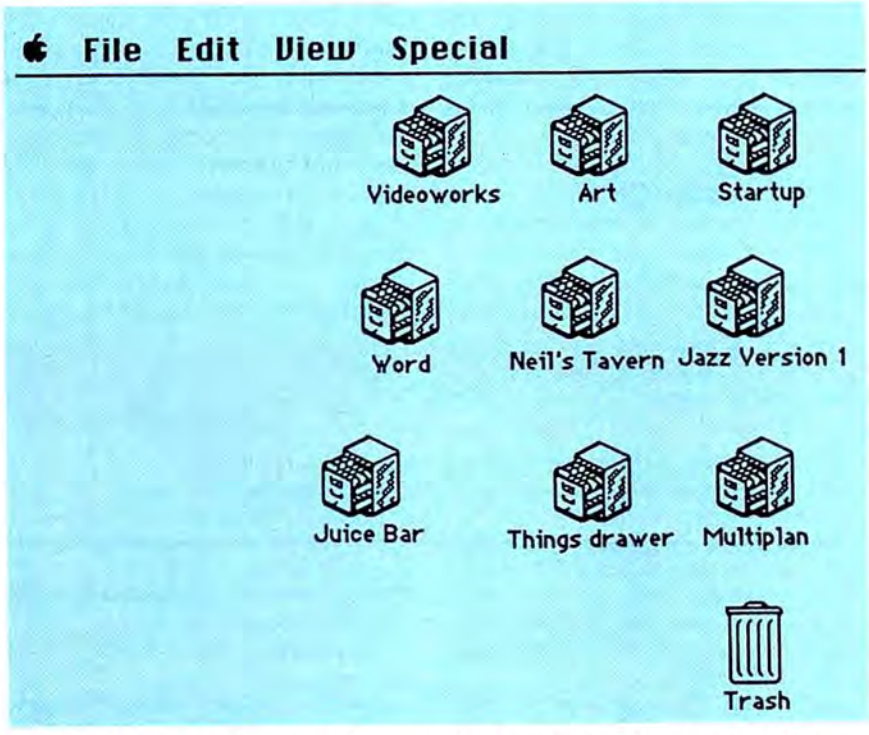
Somebody Has To Be Different

Let's call it the "**What?** principle." IOmega makes a different breed of hard disk. Media for hard disks is sensitive stuff. Data is packed into very tight tracks and the disk platters themselves are extremely fragile. For this reason Winchesters are hermetically sealed to keep out dust or anything else that could come between the drive head and the media surface. If you so much as move a hard disk while it is in operation, you are either a high roller or you're trying to see if somebody up there likes you. The tolerances are so fine in a drive that a slight jar can bring the head into physical contact with the disk (where it should never be) and cause a permanent data error at the very least. IOmega's aproach is to treat the hard disk as a piece of office equipment bound to be abused. Instead of a hard platter, they use a very large, fast-turning flexible disk which, at speed, creates an airfoil effect on the data side. The sensor rides on an air cushion and if a physical shock is transmitted to the whole unit, the disk simply bends away from the head. Clever, huh? It's called the Bernoulli principle and the unit is called the *Bernoulli Box*.

The Fork In The Road

Drives come in two basic application types: single user and multi-user. Multi-user systems include Corvus' *OmniDrive,* IOmega's *Bernoulli Box* (10 + 10), Sunol's *Sun*Mac* and MicroDesign's *Keeper.* All four are classed as system servers, providing data for all the computers on an AppleTalk network, but only the *Keeper* and the *Sun*Mac* are true file servers. (See **Mac User**, issue 1: *File Servers*.)

What ultimately separates one hard disk system from another is the controlling software used. Megabyte for megabyte, and all things considered, the best single user system is the *HyperDrive 20.* It has the most sophisticated software of any hard disk built today. It is also the fastest. External hard disks receive data from the Macintosh serial ports at a maximum of 920 kilobits per second. Systems using ATP (AppleTalk Transfer Protocols) receive data at 230 kbits/second. The *HyperDrive* accesses the Macintosh directly from the internal bus at 5 megabits per second and transfers data to the bus at 1.3 megabits per second. The internal placement of the drive leaves all external ports free



***HyperDrive 10* and *20* hard disks are internally mounted and include a cooling fan. This configuration easily exceeds the power and performance of the best rival computers.**

BETWEEN A ROCK AND A HARD DISK

and the lastest version, *HyperDrive 20* features 20 megabytes of storage plus print spooling.

But what really sets this system apart from others is the software. As mentioned earlier, the only hard disks which feature volume managers as Desk Accessories are the *HyperDrive* and the *Keeper*. *HyperDrive* also features three levels of password protection plus the option of heavily encrypted files, and the desktop can display as many as 32 volumes. Entire files can be transferred from volume to volume in less than 3 seconds.

Better, Not Bigger . . .

The cardinal rule of hard disks is: back up your data. A hard disk is just another system that can fail. For the single user this means that a smaller but faster hard disk may be easier to work with than a larger, slower machine.

When You're Having More Than One . . .

The *Keeper* is a file server. It can provide storage for all the Macs on an AppleTalk network and permit as many stations to enter the same volume and view a file as needed. It also features print spooling and password protection. The *Keeper*'s software is designed to be as intuitive as possible. The volume manager is a Desk Accessory transparent to the system. Since the *Keeper* is intelligent, it can manage far more files per volume than the Finder. It can keep track of up to 3,000 files per volume, while single user systems are "restricted" to 512 files per volume with version 4.1 of Apple's Finder. Sunol's newest *Sun*Mac* is also a file server. The *Sun*Mac* is designed to take on the heavy work loads associated with tying several different operating systems into one network.

Contrast file servers with the restriction placed on the *OmniDrive* and the *Bernoulli Box*, both of which allow one user at a time in a volume. It is only fair to add that these caveats have to be weighed against the costs.

The Rock Has its Merits

The immediate returns offered by a hard disk are the speed increase, centralized data storage and, in the case of multi-user systems, relative degrees of support for a network. At this point, needs must be taken into account. If the network is going to be large and will include computers using operating systems besides the Macintosh, such as MS-DOS, TRS-DOS or CP/M, the *Sun*Mac* is worth looking at. It can be configured to 275 megabytes. If rapid interchange of files between network users is a premium, the *Keeper* should be considered. It is recognized by AppleTalk as another device, just as each computer is a device, thus permitting as many *Keepers* as necessary to be added to the network.

Caveat Emptor

All hard disks require software to manage their systems. Be sure, when considering a hard disk, that the system uses the latest version of the Macintosh Finder (presently version 4.1) and that when subsequent versions are made available there is some kind of upgrade policy. If you are not sure which Finder is being used, boot up the hard disk and pull down the Apple menu. About Finder will tell the story.

If the hard disk uses the Mac's printer port, be sure that the disk itself provides a port for the ImageWriter. The single user *Bernoulli Box* uses the Mac's external drive port, leaving both printer and modem ports free but precluding the use of the Macintosh external drive.

A hard disk's startup software should self-eject. If the disk must stay in place you have lost use of that drive. *HyperDrive's* startup software can be loaded onto the hard disk so the system boots itself. Tecmar's System version 2.0 is self-ejecting.

Don't Say I Didn't Warn You . . .

Buying a hard disk is not major surgery but it does pay to have more than one professional opinion. Assess your needs, both present and projected. Check out the software and the technical aspects as outlined above and make sure the manufacturer is established and offers more than just a box of gear. There must be a warranty, there must be a service policy and there must be tech support by telephone. If all goes well, soon you too can be whizzing through files, jumping from volume to volume and print spooling with your very own Hard Disk.

KNOW YOUR HARD DISK LINGO

Transfer rate: The rate at which stored data travels from the hard disk to the Macintosh bus. Mac serial ports clock at 920 kbits/sec, unless the hard disk is configured to run AppleTalk Transfer Protocols.

ATP: AppleTalk Transfer Protocols; transmission standards and recognition codes; one protocol is the rate at which data travels over an AppleTalk network; 230 kilobits per second.

Winchester: The sealed hard disk unit including hard disk platter, drive motor and stepper motor (for moving the sensor).

Megabyte: 1 megabyte = 1,024K or Kilobytes. Single-sided 3½" disks can store up to 400K.

Volume: A section of hard disk memory recognized as a separate drive by a computer.

Volumizing: Partitioning of a hard disk into smaller sized volumes or drawers to optimize the Finder's file tracking capabilities.

Desk Accessory: A subprogram installed in the Macintosh system that is transparent as an application and always available from a desktop.

Spooling: Creating a temporary file for data on a hard disk that effectively relieves the Mac of managing print operations.

Serial ports: The modem, printer and external disk drive ports at the back of the Macintosh.

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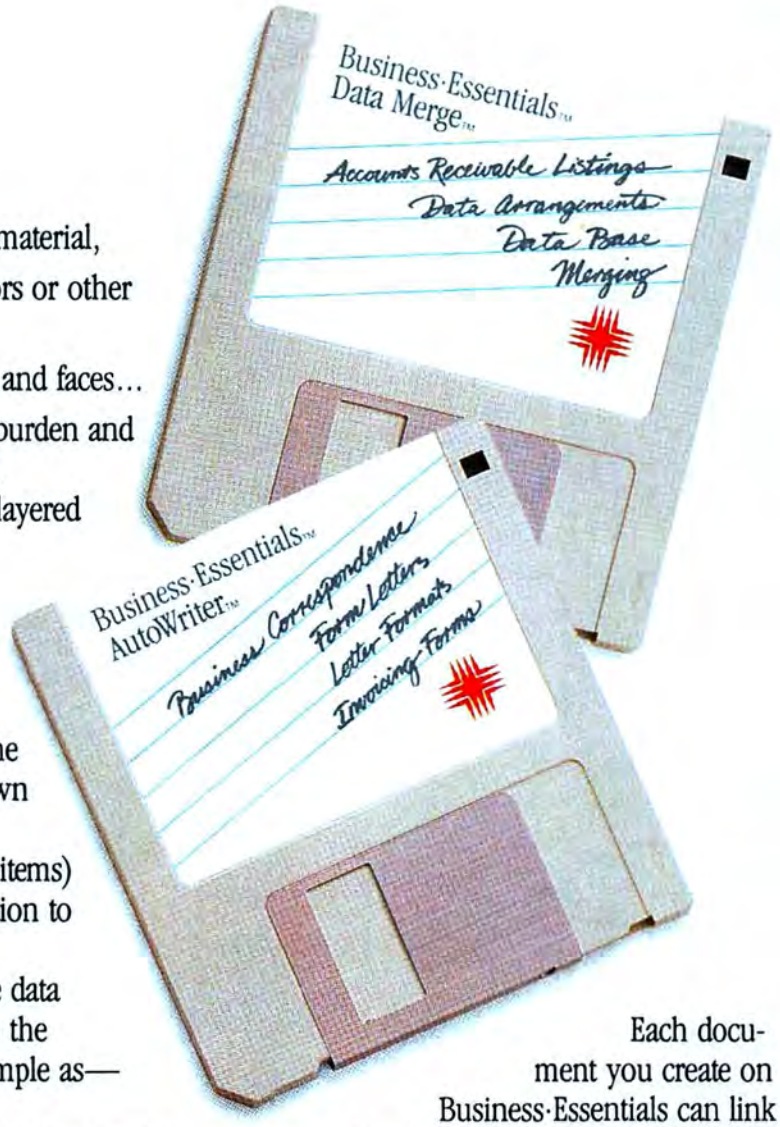
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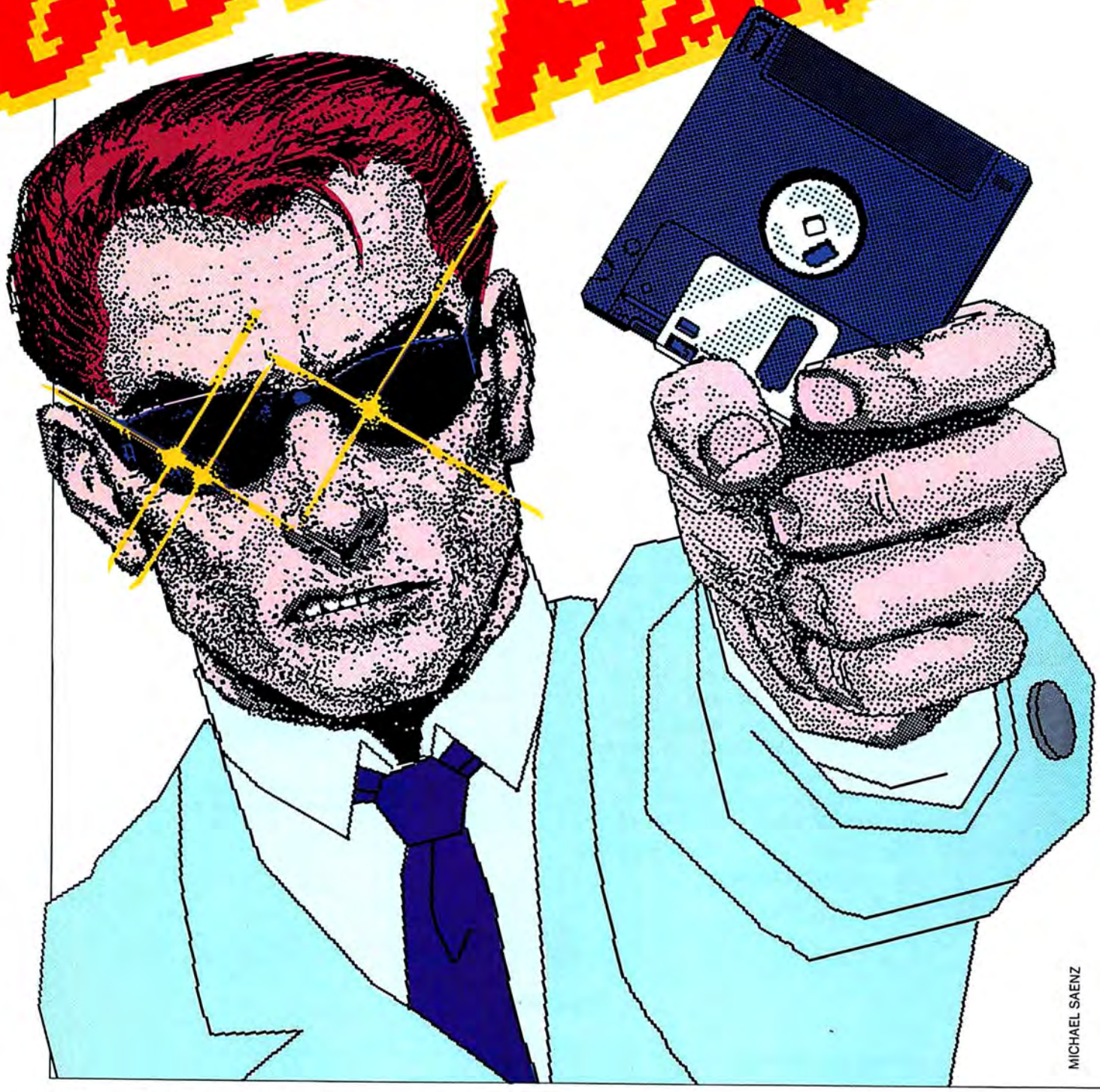
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GO AHEAD... MAKE



MICHAEL SAENZ

MY PAGE!

PageMaker makes you your own art director.

by Michael D. Wesley

ALL COMPANIES PRODUCE HUGE numbers of documents for internal use. Interdepartmental memos and minor reports often need little more than typing and duplication, but many other documents require sophisticated text and graphics, and a highly professional look.

To meet these needs companies send editorial material out for typesetting. Type is pasted down with graphics on layout boards, the boards are sent out to a reproduction house, and then to a printer. This process is often slow and very costly.

It was only a matter of time before software developers exploited the Macintosh's graphics and the high-quality printing capabilities of the LaserWriter by creating desktop publishing applications. *MacPublisher* and *ReadySetGo* have been available for some time now, although neither has the power to function as a full-blown desktop publishing system.

PageMaker, recently released by Aldus Corporation, has the power to handle nearly all aspects of desktop publishing. It has its own toolbox of drawing tools; the ability to place, crop, and resize graphics; to bend text around pictures; to place whole files onto a board, and print documents in near-typeset qualityon a LaserWriter or other PostScript printer.

PageMaker can dramatically simplify and improve written communications within companies of all sizes. Small businesspeople will find it valuable for self-generated ads, brochures and public announcements. Here we'll see how to use *PageMaker* to assemble a company report that has text, charts, other graphics and a newsletter.

Preparing Text

Before creating a *PageMaker* publication, text should be written and edited in advance. Although text can be created and edited directly within *PageMaker*, it helps to have a clear idea of the length, structure and desired appearance of a body of text before jumping into *PageMaker*'s layout area. Besides, *PageMaker*'s word processing is an auxiliary feature, so it functions very slowly.

PageMaker reads *MacWrite, MS Word* and text-only files directly. Text styles, tab stops and other formatting elements of the documents will carry over, while line lengths follow the margins users set in the target areas.

Text-only files transmitted from other computers via modem can be placed directly into *PageMaker*. The resulting text will be unformatted, so style and structure elements must be added in *PageMaker*. Tables created with worksheet programs can also be included by copying to the clipboard, and pasting into a *MacWrite* document.

Preparing Illustrations

PageMaker also reads *MacPaint* and *MacDraw* files directly (*MacDraw* files must be saved in the PICT format). If

only a small portion of a file is needed (such as the company logo for the MW Company report) it should be copied into a Scrapbook which is then moved onto the *PageMaker* disk. This will save time when it comes to manipulating the material in *PageMaker*.

Charts, graphs and other business graphics can be prepared with *Microsoft Chart* or similar programs, using data copied from *Multiplan* worksheets. Charts and graphs should be enhanced to presentation quality in *MacDraw*.

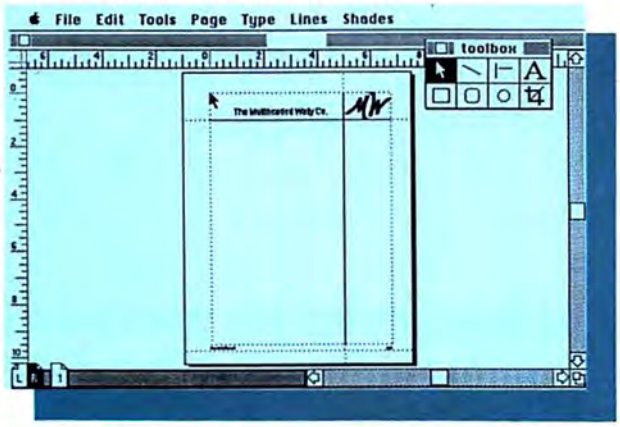


Fig. 1: The *PageMaker* screen with the right-hand master page displayed. Solid lines, name and logo will print, while dotted lines are only guides. The rulers' zero points are initially set at the upper inside corner, but can be changed. The background behind the page is the 'pasteboard' area. Text and graphics can be placed here temporarily.

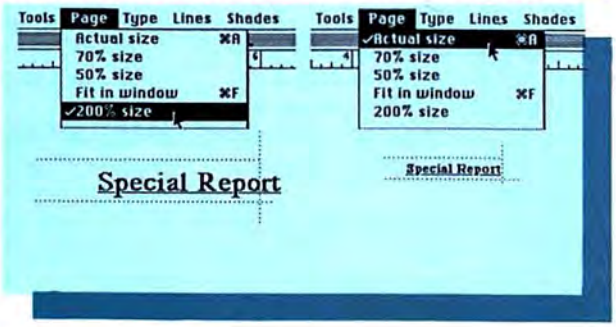


Fig. 2: A corner of the document expanded to 200% size indicates that the tag line *Special Report* extends beyond the outside margin. With no change made to the document itself, the tag shown Actual Size appears to be correctly placed. Screen inconsistencies abound in *PageMaker*. The Actual Size display is usually closest to the printed version.

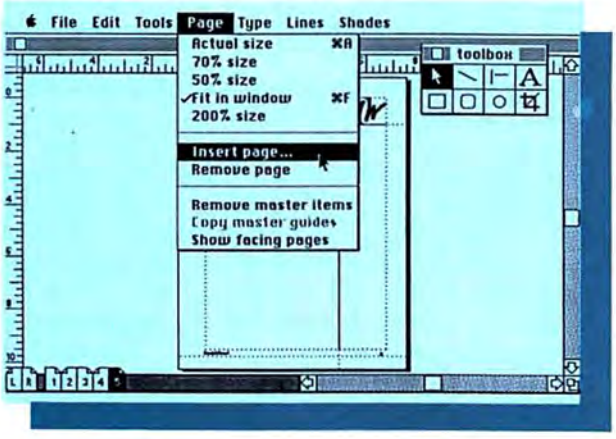


Fig. 3: The Insert Page . . . command adds new pages to the document. New page icons appear in the lower left corner of the screen.

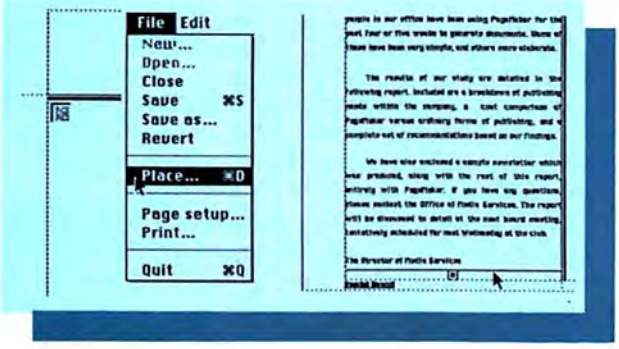


Fig. 4: The Place. . . command reads text and graphics files directly from disk and stores them in a temporary holding area within the program. A text cursor appears; it resembles a try square with text attached. Clicking the mouse button drops the stored text into the space provided. The text is confined by margins, column guides and graphics, if present.

Publication and Page Layout

Once text and graphics are ready to go, the next step is to plan the layout of the report *on paper*, including margin positions, page numbers and standing (repeated) text or design items.

The same process used to design the publication layout must be duplicated for each of the page formats that will be used in the report. The cover letter and report documents contain text and graphics only from the margin to the vertical rule. The newsletter portion could be designed in two or three columns, depending on the nature and size of text blocks and graphics.

Preparing the *PageMaker* Disks

Once the text and graphics are ready, *PageMaker* disks should be prepared. *PageMaker* comes as a set of two disks, a system disk and a program master disk. These disks should be backed up, but the manual's instructions on this subject are not up to the high quality of the otherwise very well-written

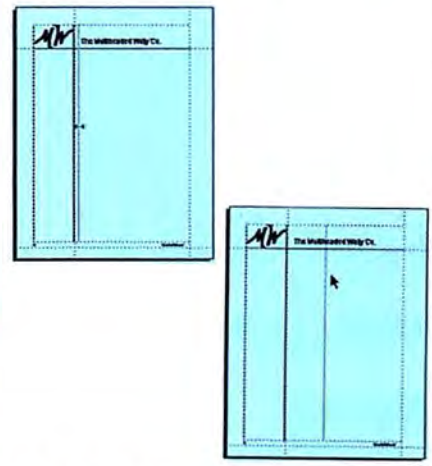


Fig. 5: Selecting Column Guides. . . from the Tools menu brings up a dialog box which asks for the number of desired columns and the space between column guides. On pages 1 and 2 of the report, two columns are selected with no space between. The column guide is moved (via click and drag) to a position 1/8th inch to the inside of the vertical rule to allow space between the rule and incoming text. The column guide and the margins, outside and bottom, define the text area for the page.

manual.

The manual simply tells users to "make one backup copy of both disks. Do this now, and store your backup disks in a safe place."

That's a bit unusual. Backup disks are normally maintained as working copies, with the masters stored safely away.

In fact, the original program disk is a key disk. It must be inserted once each time the program is loaded from the backup disk (or run from a hard disk) in order to unlock the copy protection. If a user happens to follow the manual's advice, uses the master as a work disk, and then through accident or carelessness trashes it, the backup disk will prove useless.

The correct procedure is to use the backup disks as working copies, although the original program disk will be required each time *PageMaker* is loaded. After loading both masters should be put safely away. The use of the master as a key to unlock (or allow use of) a backup is not mentioned in the manual. (Aldus assures me that the manual will be corrected by the time you read this.)

Starting the Report

The first step is to transfer the publication layout, already designed on paper, into *PageMaker*. Selecting Double-Sided causes the document to print on both sides of each page.

PageMaker initially displays only the first page of the new publication, a right-handed page. Two page icons, with the right corners turned down (cute, huh?) appear in the lower left of the screen. Clicking on the page with a 1 in it brings page one into the window. Clicking on the R page activates a master for right-hand pages. Items that will appear on every page of the report must be placed on master pages.

Designing Master Pages

Since our example report is double-sided, masters must be created for both left and right pages. Selecting Double Sided from the Page Setup menu brings two pairs of left and right master page icons into view. Clicking the R icon brings the right master page into the window.

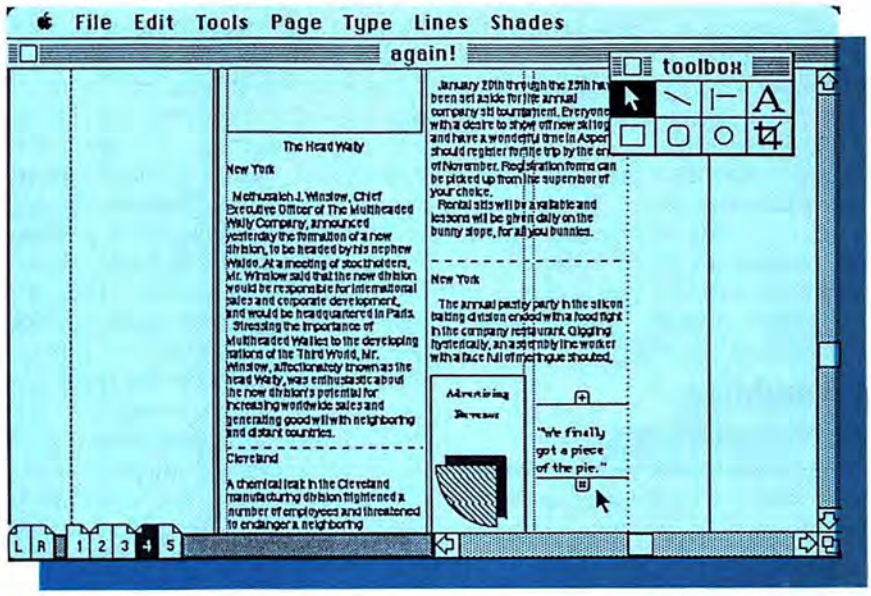


Fig. 6: The newsletter page is designed in three columns—one for the white area beneath the logo, and two for the text area—with a space of 1/5th inch. The column guides are dragged so that two equal areas emerge. Boxes are drawn to define space for a photograph at the top of column one and a 'cartoon' at the bottom of column two. Text is placed just under the photograph's caption, and then is flowed into the columns. Dotted rules and spaces are added so the text stops at the box, just before the cartoon's caption is placed. The middle column guide is then dragged to the right of the cartoon box. This does not affect the text already placed, but does force the caption into the empty space.

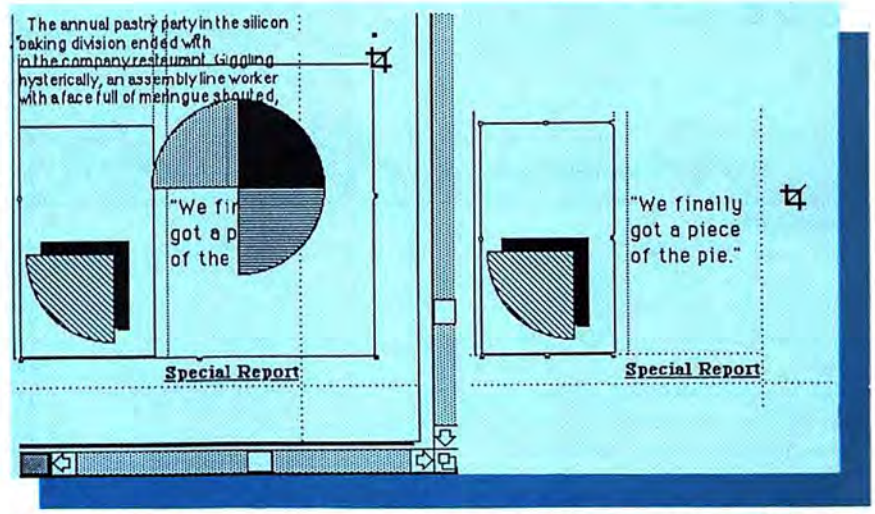


Fig. 7: The chart file that will be used for the cartoon is placed. Most of the drawing must be cut away, leaving only the exploded pie slice. The cropping tool is used to cut away the unwanted portions of the drawinig, without affecting the size or position of the pie slice. The headline 'Advertising Revenue' is typed directly in the cartoon box.

Nonprinting ruler guides are drawn by clicking anywhere on the edge of a ruler. Page numbers are added by placing an insertion point at the lower outside corner of the page with the text tool, and typing Option-Shift-3. The tag line, *Special Report*, is positioned similarly in the lower inside corner.

PageMaker can display a publication in any of several sizes: actual print size, reductions of 50 and 70%, expansion to 200%, or condensed so the entire page fits in the window. All editing and design functions work regardless of the screen display, except that text is too small to be edited in the Fit in Window mode.

The Actual Size option is used to place the page numbers and tag line as accurately as possibly. Although the 200% size has the largest number of fractional markings on the rulers, and ought to be the most accurate, in many cases items that appear to be

GO AHEAD! MAKE MY PAGE!

placed correctly in 200% are slightly off in Actual Size. The screen display is often inaccurate to some degree, but the printed version best matches the Actual Size screen.

Master items that print are locked onto individual pages. They can be altered on the *master* page at any time, but changes are then reflected on every page. Save the publication now and often, especially after a major operation such as Place.

Assembling Individual Pages

The report contains a cover letter, two information pages, one newsletter page, and a page for a company calendar (which is not shown) for a total of five pages. New pages should be inserted before design begins by selecting Insert Page. . . from the Page menu.

It helps to work with separate files for each section of the report. Position files by using the Place . . . command. Open the file from the minifinder and place it using the cursor shaped like half a square with text in it.

Adjust the cover letter text slightly so that it will appear centered vertically on the page. Selecting text with the pointer tool causes a windowshade to appear at the top and bottom edges of the text block. Moving the top shade down slightly pushes all the text down the page, but the bottom shade remains in the same position, so some of the text disappears. The "+" appearing in the pull tab on the shade indicates that there is carryover text. The bottom shade can be pulled down until all the text is exposed and positioned.

The position of the columns is repeated for page 2. Page 3 requires a slightly different format because of a vertical illustration. These pages require illustrations to be mixed with the text. Space should be left for graphics before text is placed.

When a text file is too large to fit its allocated space, use the text placement cursor and windowshades to adjust it to fit the space. If text is too big for space allocated, *PageMaker* still reserves space within itself for the overrun and keeps all the text in its original order. Cutting a piece of text from a text block may leave an equal-sized block of white space in its place. To clear the space the windowshades must be closed and then cut.

Chart files are placed the same way as text files, but the placement cursor will be a pencil, indicating a *MacDraw* document. When a chart is first placed it may exceed its limits in any direction, overlaying text and extending over margins. Use the arrow cursor to adjust it, as you would in *MacPaint*.

The sample newsletter page will be formatted slightly differently from the rest of the pages. It will be presented as if a standard-sized page had been shrunk to fit into the text areas.

Before the columns are established, the title of the newsletter must be typed in. This title is longer than the line length of the columns, and would be truncated to fit if the columns are

(continued on page 150)

The Multiheaded Wally Co.

November 1, 1985

As requested at the last board meeting, the Office of Media Services has conducted a thorough examination of in-house publishing using our new Macintosh computers and a product called PageMaker. Several people in our office have been using PageMaker for the past four or five weeks to generate documents. Some of these have been very simple, and others more elaborate.

The results of our study are detailed in the following report. Included are a breakdown of publishing needs within the company, a cost comparison of PageMaker versus ordinary forms of publishing, and a complete set of recommendations based on our findings.

We have also enclosed a sample newsletter which was produced, along with the rest of this report, entirely with PageMaker. If you have any questions, please contact the Office of Media Services. The report will be discussed in detail at the next board meeting, tentatively scheduled for next Wednesday at the club.

The Director of Media Services

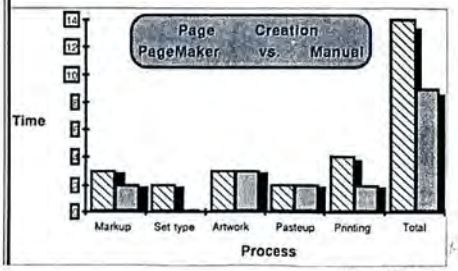
Special Report

1

The Multiheaded Wally Co.

The process currently used by the the Office of Media Services to generate newsletters, company reports, and other internal documents can be a long and costly one. The company newsletter alone requires all the media staff and several outside contractors for two to three weeks time. This cuts down on our ability to produce other necessary documents as quickly and efficiently as we otherwise might.

The chart on page three details the steps followed from idea to finished newsletter. Reporters or media personnel track down stories, collect press releases, and discuss upcoming events with management. Stories are written and copy is sent to the Director of Media Services who acts as Editor of the publication. The Editor plans illustrations with a staff designer, and edits the stories provided. As illustrations are being



2

Special Report

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RUBICON PUBLISHING

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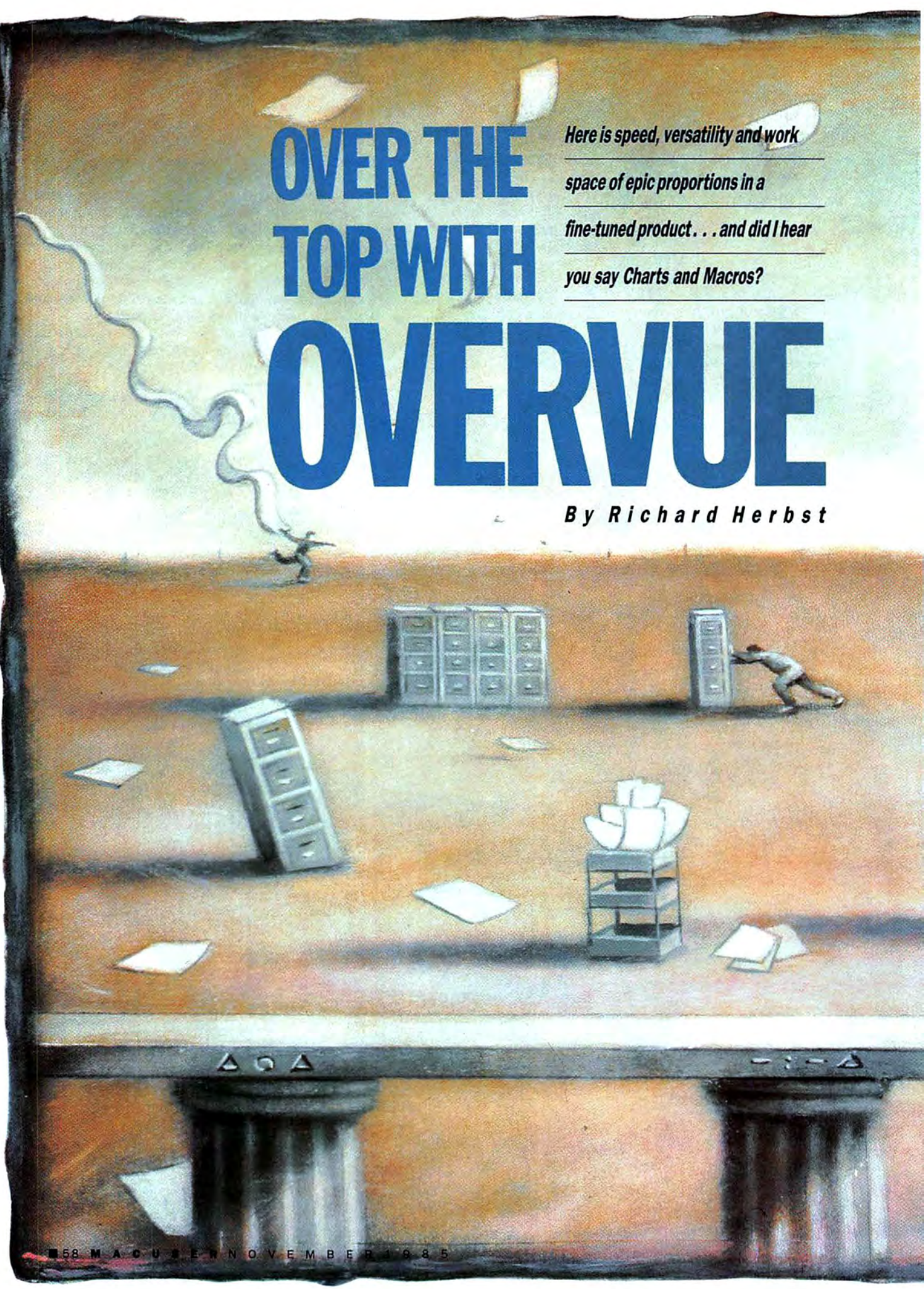


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OVER THE TOP WITH OVERVUE

Here is speed, versatility and work space of epic proportions in a fine-tuned product . . . and did I hear you say Charts and Macros?

By Richard Herbst



OVERVUE 2 IS A POWERFUL, VERsatile database manager that goes far beyond the basic services offered by comparable products. It is RAM-based, written entirely in assembly language and without a doubt the fastest database ever offered for the Macintosh. ProVUE (*OverVUE*'s publisher) has gone to great lengths to anticipate any need a data manager could have and has installed menu access to so many routines that it could be a business software tutorial.

With more than 500 Mac software products out and a good many of them databases, it is time to be discriminating. Users want more than just a place to store information—they want software that will sort and retrieve fast, letting them manipulate the data so that it provides meaningful conclusions in and out of context. They want to generate reports and labels, do mail merges, create relational files and most important, they want software that can exchange data with as many other software sources as possible. This is *OverVUE 2*.

There Are Databases and Then There Are Databases . . .

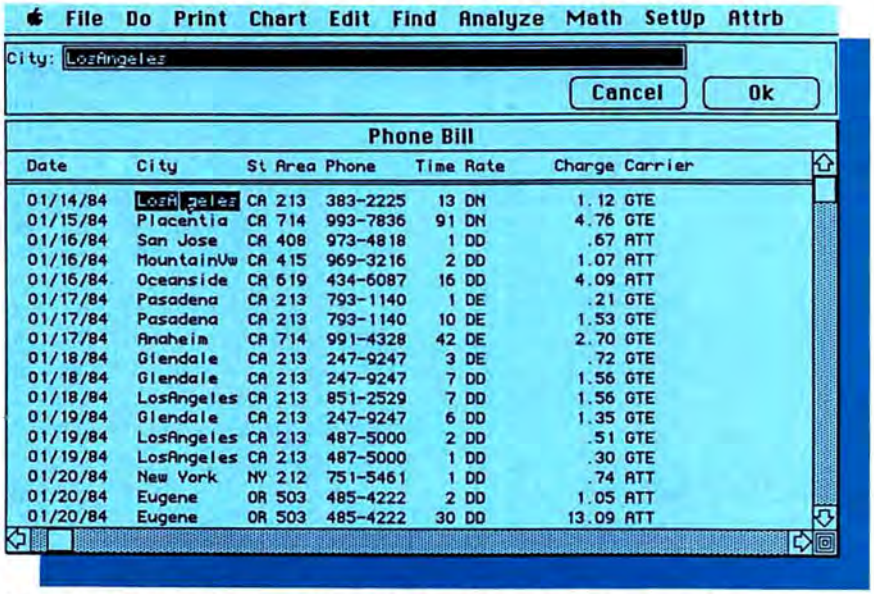
Basically there are two types of databases: text and spreadsheet. The text database's biggest drawback is that it only displays one record at a time. The trouble with spreadsheets is that they are not really intended for the text entry, sorting or report generation required of a database. Fortunately, *OverVUE 2* provides the best of both worlds. The primary datasheet resembles a spreadsheet: fields are displayed in column format, records are read from left to right. In the lower righthand corner of the data sheet is a Zoom button that displays all the fields in a single record on screen at once. Data entry can take place from either the datasheet or within the record display. Clicking on a blank row of the datasheet and zooming in produces a blank record in text format. Just like a text database. Simply tab from field to field to enter information.

Who Uses OverVUE?

OverVUE is a finely tuned program that combines endless sorting and summarizing techniques with extended math capabilities such as one would expect of a good spreadsheet. Its macro capabilities can make it into a powerful tool that can be customized to exacting personal requirements. *OverVUE* answers the needs of execu-

WARREN GEBERT

OVER THE TOP WITH OVERVUE



OverVUE's data is displayed in columns. Clicking on the ZOOM buttom brings an entire record to the screen.

tives and business managers who need to keep track of the details of their operations and have the options of interpreting data statistically and presenting it graphically. It is for the user who has to deal with systems other than the Macintosh and needs the availability of data from these programs.

In the following sections we will examine some of the applications available to a database user and compare the options available using *OverVUE*.

Planning a Database

Rarely, if ever, does a database provide information for calculating the size it can grow to. *OverVUE* tackles this problem. Each data sheet accomodates up to 64 columns of data containing 62 characters each for a maximum of 3,968 characters per record. The number or records available is limited only by the memory available in your Macintosh as outlined below.

Macintosh (128K) 28,000 char.
Macintosh (512K) 345,000 char.
Mac XL (512K) 200,000 char.
Mac XL (1024K) 700,000 char.
Mac XL (2048K)* . . . 1,700,000 char.

*Using 2-megabyte AST expansion board.

Using the table above it is possible to calculate the maximum number of records possible in a file by dividing the workspace by the average length of each record. In a simple directory containing first name, last name, company, street address, city, state, zip, area code and telephone number, the following are typical results.

First + Last names . . . 10.5 characters
Street address 17.0
Company 10.5
City 8.5
State 2.0
Zip 5.0
Area code 3.0
Telephone 7.0
Average record width 63.5

Workspace ÷ average record width = 345,000 ÷ 63.5 = 5,433 records*

*Records available with a 512K Macintosh

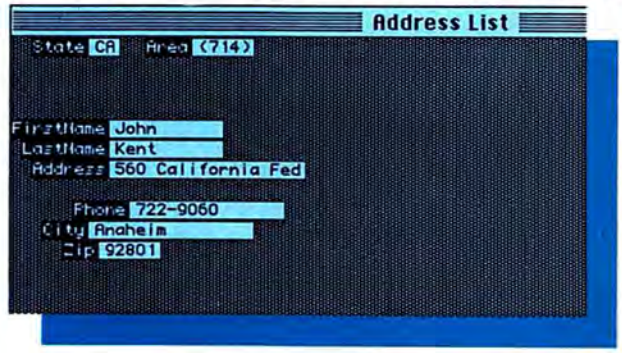
Input

Typically, data is entered into a text database by first setting up a screen format consisting of fields, each of which must be assigned a maximum number of characters, a name and a format value such as numeric, dollar, time, text or date. The overall format must then be saved as a master template into which data is entered. Changes to the type of data being entered usually require basic editing changes and a new format. The field size is constant, meaning that whether you key in 2 characters or 20 characters, you have used up the maximum number of characters allowed for a field and reduced available workspace by that amount. *OverVUE*'s data columns can be added at the right or inserted into an existing datasheet. Workspace is reduced by only the actual number of characters entered, not the field size specified.

Since a text database displays only one record at a time, the only way of comparing records is to print a report. *OverVUE*'s records are on-screen for immediate visual comparison and reference. To get into a text database's records a search is necessary and without a reference, some sort of indexing is required, usually implying a specific sort criteria. Although *Omnis* 2 has such an on-screen directory, records must still be selected. Again, since *OverVUE*'s records are always available on-screen, any cell or field in a collection of records can be either scrolled to or pinpointed by making a menu selection in that column.

Streamlined Entry

The more uniform data entry can be made, the more accurate the database. Conventional databases can assure only uniform field names. *OverVUE* includes several features to speed things up and check errors.



Enter or modify data directly into the ZOOM screen. Fields can be moved around freely to create the equivalent of a text-entry database.

"Input Patterns," available from the SetUp menu, are templates for dates, phone numbers, and things like social security numbers. Subsequent entries require only integers or characters. Here's an example:

Data	Input pattern	Appears as
Phone number	() -	(212) 302-2626
Date	/ /	09/04/85
Speed	mph	147.5mph

Another way of saving time is to save steps by using macros. A macro is a single command that performs a sequence of instructions. *OverVUE* offers a complete macro language. Since *OverVUE* offers endless sorting and summarizing routines it would become tedious to have to perform the same routines again and again and again. The program can create up to twenty macros on a single datasheet. Macros can be created on the Note Pad or in *MacWrite* and transferred via the clipboard to the Do menu, where they appear as mouse commands with keyboard equivalents. The macro language includes any command that can be found in a menu plus some interesting special commands.

A command character can also be included to perform the macro's function from the keyboard. By including a "Hide" and "Show" instruction at the beginning and end of a macro the screen is reconstructed just once during execution.

Again and Again . . .

Repetitive entries are time consuming and often result in inaccuracies, especially in large databases. *OverVUE* provides an interesting function, "Clairvoyance," which searches a column as data is entered and presents the entire entry if it finds a match. A quarterly statement containing multiple billings or checks written to the same party makes good use of this feature. Besides greatly speeding up data entry, Clairvoyance ensures data uniformity. Consider the problems encountered in building large databases where frequent search operations will be required. A typical database might have any number of variations of a company's name in it:

Mac User
Macuser
MacUser Publications
Mac User Inc.
MacUser Corp.

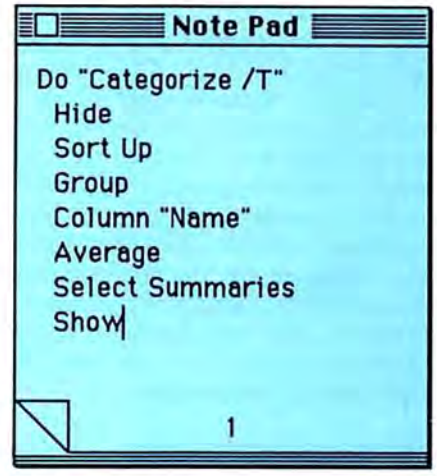
Input with Clairvoyance eliminates these inconsistencies. Just remember: To do it wrong you must do it wrong the first time.

The SetUp menu also includes a function called "Value Bar." If a column is going to contain the same names or values frequently, frequently used entries can be defined in advance. By double-clicking on a cell, a dialog window appears with its choices available by clicking on-screen buttons.

The Fill command is used to fill an entire column with the same data, such as a constant that will be part of an equation throughout the datasheet. The Empty Fill command fills all of the empty cells in a column with the same data. An information sheet might require a number of similar entries such as "Not Available." The Missing command analyzes missing elements of a sequence such as 120, 130, 140, 170, 190, . . . and adds the values 150, 160 and 180 to complete the sequence in the proper locations. Tracking a checkbook's records can be greatly simplified with this function.

Math

OverVUE performs simple algebraic equations with both numeric and text values using the basic operands: * (multiplication), / (division), + (addition), – (subtraction) and () parentheses. In addition there are a choice of relational operands. These include = (equal to), < > (not equal to), < (less than), > (greater than), < = (less than or equal to) and = > (greater than or equal to). Boolean functions such as AND and OR are found in the Find menu. Boolean operators are available as well. For instance, a Zip code directory can be queried for entries between 10011 and 20362. (Greater than 10011 AND less than 20362.) From the Zip codes column choose Select and click on >10011. Next select <20362. The result will include the specified range.





Macros can be created in *MacWrite* or on the Notepad and loaded into the "Do" menu where up to 20 can be stored for each file.

The Boolean OR function works in a similar way. To find Zip codes in both Arizona and New Mexico select all records in Arizona then, using the Select More command, specify New Mexico. This sort of command power would normally be reserved for spreadsheet users, but here they are in *OverVUE*.

A typical file containing expenses, check numbers, parties to whom they were written, amounts, dates and an opening balance would normally be a job for a spreadsheet. All that information, and more, can be listed in *OverVUE* and math operations performed upon the data. *OverVUE* will total a column of amounts, do a count of checks written (or any other records), average the amounts, display a maximum or a minimum amount and present a running total or running difference. Checks can be sorted by

number, date and amount. The file may contain columns listing checks from two or more banks. *OverVUE* lets you write an equation combining the values of more than one column. You can multiply two columns, add the result to a third, invoke a fixed value such as a formula for the area of a circle and divide by 100 for a percentile ranking. Equations can also combine columns of text, calculate elapsed time between dates and perform many other functions. Text can also be modified in a text equation.

Sorts and Summaries

Analyzing information from most databases can be a fairly tedious operation that requires using limited numbers of sort fields. *OverVUE* provides extensive and almost limitless sorting and summarizing procedures. The basic sort operand is SortUp. This, and SortDown, work on text as well as numeric values. The check database can be directed to select all checks written to a specific party, or written within a specified period of time, and will isolate those records in a summary. Subsequent math operations can be carried out on the summary records. The Find menu is a gold mine of functions including Select, Select More, Select All, Select Summaries, Select - Reverse and Select Unique.

Sorts can be extended to many levels to filter information. A file containing information such as sales figures and salespersons and including listings by city, state and region can be modified to show useful summaries. Sorting and selecting will produce summary records that can show a salesperson's activity on a city by city, state by state or region by region basis. All of the math functions in *OverVUE* are applicable to summary records.

When managing columns of figures such as bank balances, phone bills and inventory records, it is sometimes necessary to categorize certain areas and perform math functions on the isolated areas. Why not do it the modern way with *OverVUE*?

Start with a phone bill. By choosing the Charges column and selecting Total from the Math menu, a summary record, the grand total of charges, appears at the bottom of the bill. To get a getter idea of where telephone money is going, first sort up by city, now group by state, go back to the charges column and select Total. The result will be a sheet showing states in alphabetical order, cities within those states also in order and totals per city. Each total is a summary record and to view them alone, select Summaries. *OverVUE* also performs nested subtotals and two-level nested subtotals.



Data can be extensively formatted for both entry and report generation. In addition special functions like Clairvoyance and No Unique provide uniform repetitive data input and ensure against errors.

Graphics

OverVUE creates five different chart formats including bar, column, line, area and pie charts. Data comes from specified Value columns, up to eight at a time. In addition values can be stacked where it would be helpful to display two or more values next to a specific legend, such as a telephone usage analysis showing Time and Charges and Carrier together. *OverVUE* can store up to six chart templates per datasheet, any of which can be modified by format or value. Charts can be modified graphically in *MacPaint*. Command-Shift-3 creates a *MacPaint* file of the chart and if *OverVUE* is used with *Switcher*, charts can be created, copied to *MacPaint* and enhanced for presentation quality results. Charts can be copied to other Mac software as well, such as *MS Word, MacWrite, ThinkTank 512* and *Jazz* by creating the chart, copying to the clipboard, entering and pasting the chart in the other program.

Report Generation

All databases print reports and *OverVUE* is no exception. Usually the reports from most databases are structured when the datasheet is first formatted. *OverVUE* can print formatted data and data summaries; whatever is available in a current datasheet can go into a report. Reports can also include headers and footers, page numbering and date and time stamping.

OverVUE's editing features permit the data to be arranged in virtually any manner. A Blank Report is chosen from the Print menu and Edit Report Template selected. This brings field labels to the screen which can then be moved around to suit report requirements. Closing the size box at the junction of the scroll bars defines the depth each record will take on the printed page. Mailing labels can be generated in this manner. A special menu bar appears when a report template is edited. When the mailing fields are correctly arranged, select 1 Up, 2 Up, 3 Up or 4 Up from the Layout menu. When it is time to print, choose from among five fonts provided: Pica (12 pt), Elite (10 pt), SemiCondensed (8 pt), Condensed (6 pt) or Ultra Condensed (5 pt). *OverVUE* normally prints 66 lines per page. Choosing the page length command from the Layout menu overrides this default setting. *OverVUE* overrides any page length command when printing on the LaserWriter.

Using the Print Report to Disk command creates a text document that can be edited by *MacWrite, Word* and other word processors. Tabs can be set in these reports by using the Shift-Tilde key combination.

(continued on page 154)

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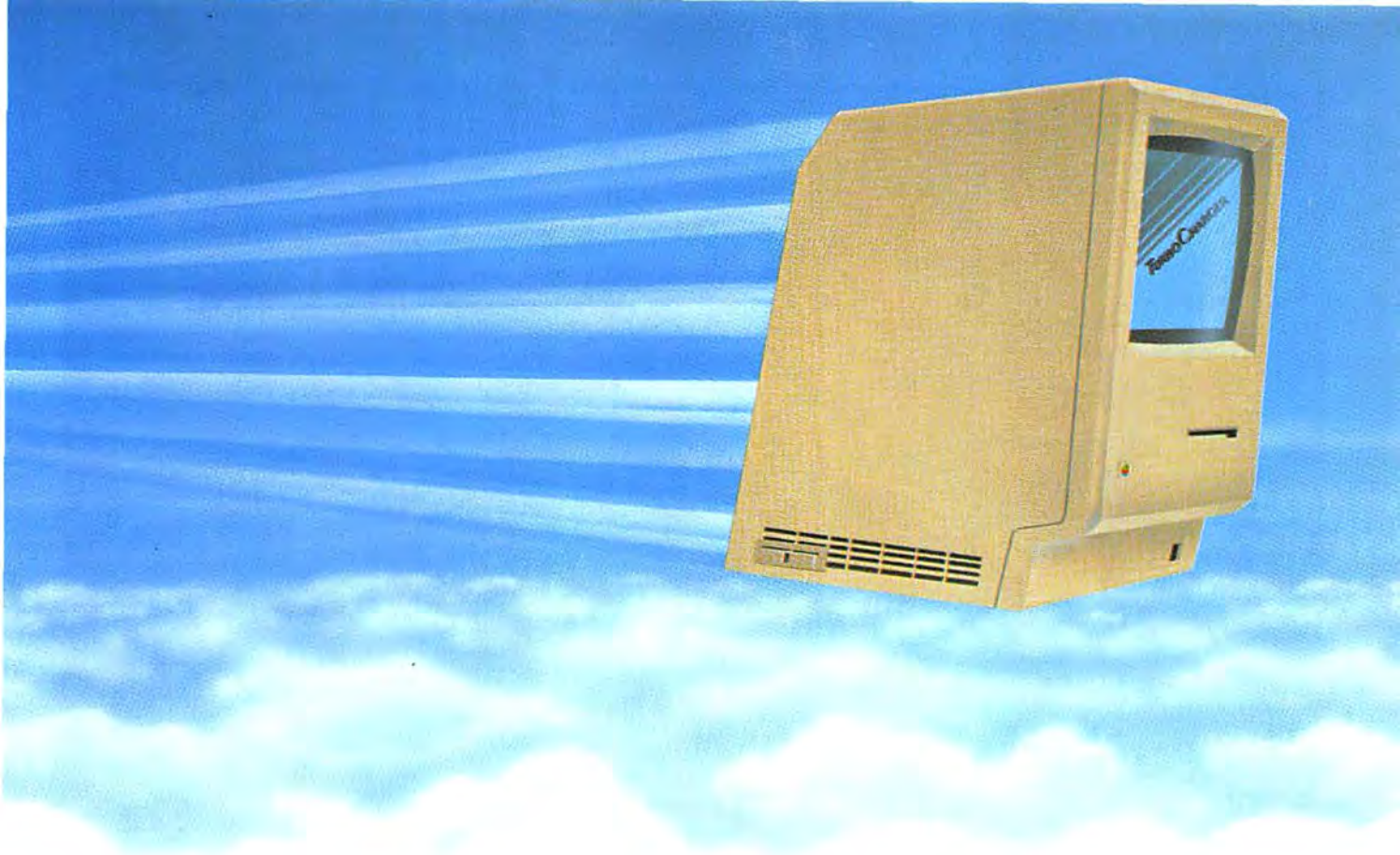
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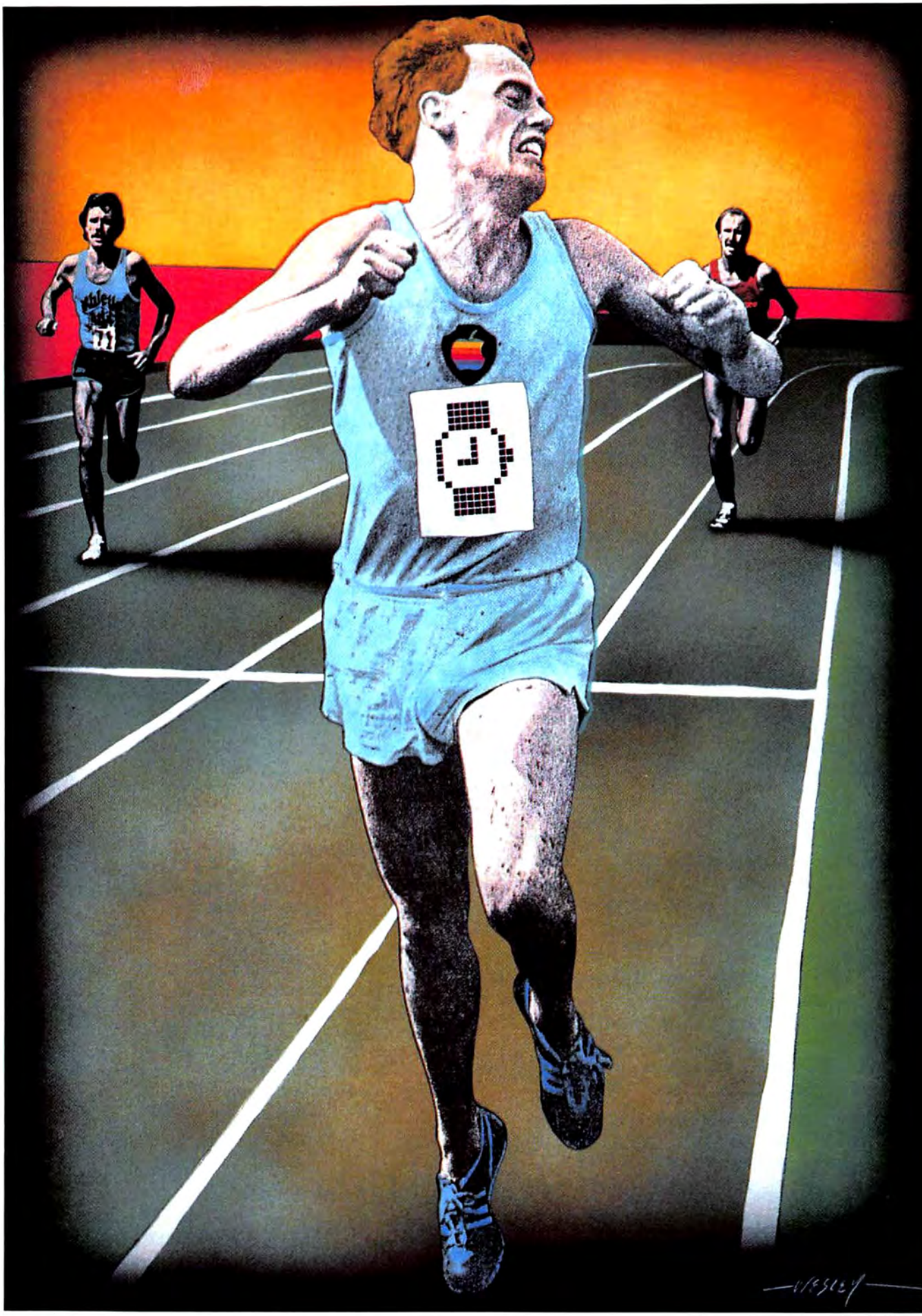
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CARL WESLEY



GETTING UP TO SPEED

by

Steven

Bobker

See the watch cursor so much that you know every pixel by name? Here's how to work more, watch less.

SINCE THAT JANUARY DAY IN 1984 the Macintosh has earned a reputation as the neatest, spiffiest, most advanced and slowest personal computer. And it's all true.

That watch cursor is always there! Because the desktop metaphor and the easy-to-use operating system all make very heavy demands on the CPU (the computing part of the machine), so often what you see appears to be slow. It doesn't matter that the CPU is actually running about twice as fast as its IBM equivalent and more than five times faster than the Apple II CPU. It seems SLOW.

Are you forever stuck with this great but slow machine? No. Simply No. Apple itself took the first steps toward speeding up the Mac.

Fatten Up

In September 1984 Apple released its 512K memory upgrade well ahead of schedule. The memory upgrade does not increase the actual speed of operations but does reduce the number of trips to the disk required (since more code can be stored in internal memory), making things appear to happen faster. This extra memory can also be used for utility programs that vastly speed up your Mac.

Thus the first and most important step to the Fast Mac is be sure that you have a Fat Mac. Then you can start exploring the wonderful world of MacSpeed.

Switch for Speed

Begin with *Switcher*, written by Andy Hertzfeld and distributed free by Apple. *Switcher* allows several applications to reside in memory at the same time, operating as a group of smaller (less than 512K) Macs.

The advantages are twofold. First, and most important, no more time-consuming trips to the desktop; now simply click and you're off and running in the next application.

Speed is also gained in transferring data from application to application. No longer is it select, copy, quit (*slow*), open (*slow*) and paste; now simply cut or copy to the clipboard, SWITCH, and paste in the target application. Now putting graphics into word processing is quick and simple.

An Extra Disk Drive, Free

Move on to the RAMdisk. A RAMdisk is an area of Mac memory set up to act as an extra, electronic disk. Since it is merely an electronic figment of the Mac's memory it runs at the very high speed of the Mac's internal memory rather than at the slow speed of the Mac's disk drives.

Copy files that are used often to the RAMdisk and experience about a 1000% increase in speed when using those files.

RAMdisks are a wonderful solution except for two features: they are limited in size (typically to between

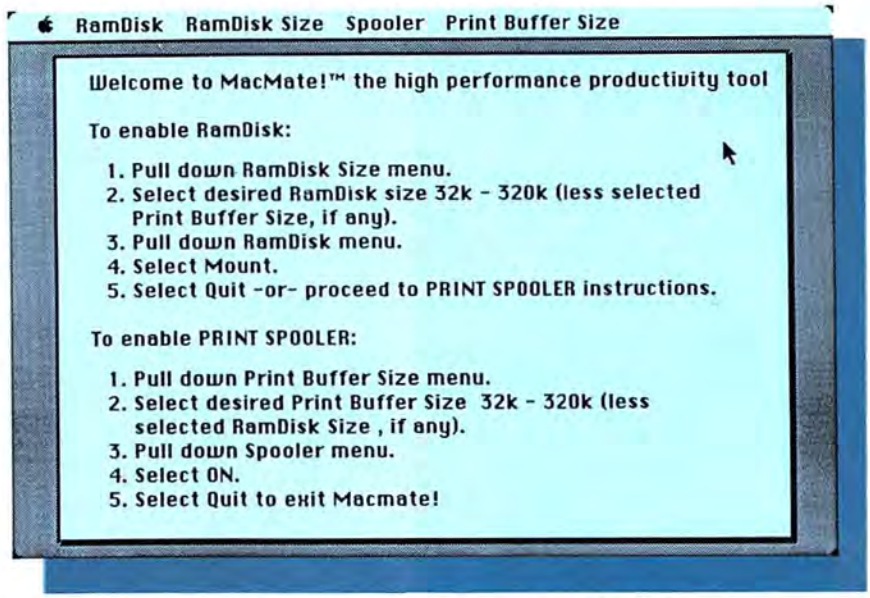
GETTING UP TO SPEED

300 and 350K on a 512K Mac), although the advent of the MegaMac (and the 2-meg and 4-meg Macs) will ease that problem; and they are *volatile*. Volatile means that everything in memory disappears when the power does. You can and will lose everything in memory (and that includes the whole RAMdisk) when the power fails—or the Mac is shut off or reset. The unexpected bomb will literally disintegrate a RAMdisk. If the data on the RAMdisk has not been saved to a regular disk (floppy or hard) it is gone forever. The volatility problem can't be eliminated and only good work habits, such as frequent saving to disk, will prevent RAMdisasters.

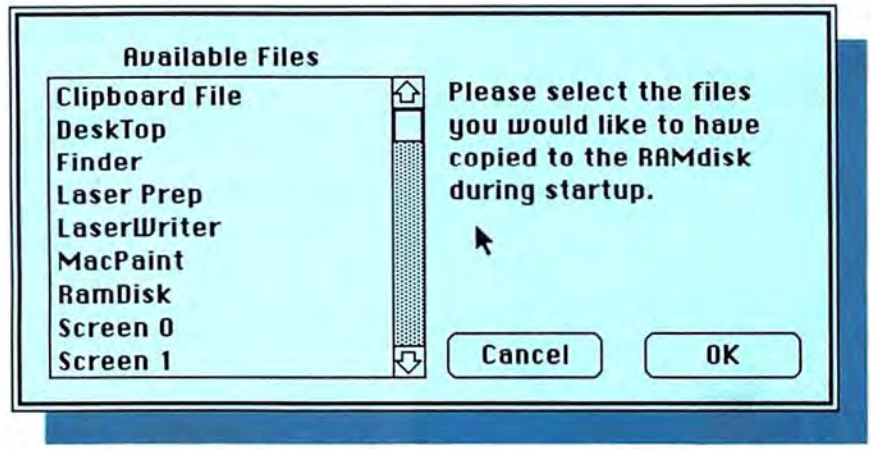
Every RAMdisk user eventually has at least one horror story about an accidental crash or about forgetting to save the data to disk. Some users simply give up on RAMdisks after a couple of episodes like that.

RAMdisks are relatively cheap. There are even several in the public domain, but at the prices of the commercial programs ($20 to $50 list —half that at discount) stick to them. The more polished commercial products have features and enhancements that make them better values overall.

Among the best commercial RAMdisks are *Mac Memory Disk* by Assimilation, *MacMate!* by SMB Development Associates, and *QuickDisk* by Symmetry. Details may be found in our MiniFinder section.



The *MacMate!* RAMdisk-print spooler is very easy to use. A help screen supplies complete instructions.



The *Mac Memory Disk* can automatically create a RAMdisk when a disk is booted. Selected files can be automatically copied to the RAMdisk. This is the dialog used to pick those files.

To Buffer or to Spool?

Printing ties up the Mac for an inordinate amount of time. Part of the blame lies in the word processors (particularly *MacWrite)* and part lies in the ImageWriter. *MacWrite* sends less than a page of data at a clip to the printer and then sits and refuses to budge until the printer reports back that it has printed the batch.

A possible solution is to send all the data somewhere and let that device worry about parceling it out to the printer. This sort of solution is called buffering and the device the data is sent to is called a printer buffer. It usually takes the form of a "black box" that connects between the Mac and the printer.

Printer buffers are not a good solution right now for two reasons. First is the huge amount of data that is required to create a *MacWrite* page or a *MacPaint* document on a printer. This mass of data requires a large buffer or the user is no better off than before. The buffer must also be intelligent enough to send the proper acknowledgements to the Mac so that the Mac will feed it the whole document instead of waiting until the small amount of data it normally sends is printed.

So the ideal printer buffer is a hardware device with intelligence and a lot of memory. Today, if you could find one, it would be very expensive. As hardware, and particularly memory prices, continue to fall, printer buffers will become a more attractive option.

Right now, the best way to avoid being tied to your printer's speed is to use a print spooler. Spooling involves the creation of a print file. That file is then taken over by the spooler which prints it when and where it can.

A good spooler can handle multiple files and runs in the background. Spoolers are small programs although there must be room on the the disk(s) for the print files they use.

In the Mac universe print spoolers are most easily and commonly implemented as desk accessories. Several come along with hard disks. For instance, PCPC's *MacBottom* and Tecmar's *MacDrive* have effective spool-

ing accessories and allocate part of the hard disks to hold the print files.

There are several print spooling desk accessories in the public domain. They do work, but users will find that they can't spool multiple files. They can only find significant use if there are long documents to be printed or the printer is constantly being used.

About the best of the currently available print spoolers is not a desk accessory. It is part of the *MacMate!* package that also includes a RAMdisk. Users select the size of both RAMdisk and print spooling buffer. By carefully setting sizes users can eliminate most of the time formerly spent waiting for the printer.

Cashing In with Caches

Another tool obtainable at the MacSpeed shop is the disk-caching program.

A what?

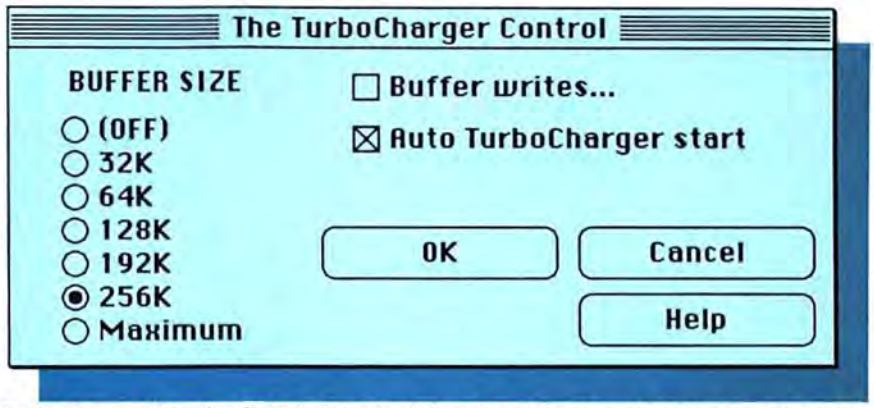
"Disk cache" is terminology from the world of mainframes. A cache program reserves an area of RAM for its exclusive use. Into this reserved buffer go frequently used tracks and resources. When the Mac is started up the buffer area is empty. As applications are run, the caching program adds resources to the buffer. As the buffer fills up, algorithms determine what stays, what's added and what goes.

As a session goes on operations become faster as the program optimizes its cache. Disk caching is ideal for users who run long sessions using one or, at most, several programs. If sessions are short or numerous programs are run there will not be as much speed gained and putting the System and Finder on a good RAMdisk would prove more efficient.

What sort of speed increase the user sees is directly related to the program's algorithms. Typically speed increases range from 200 to over 500%.

There are two disk-caching programs currently available, Mainstay's *MacBooster* and Nevins' *TurboCharger*. While both are similar in concept and overall speed gain, they work in very different ways.

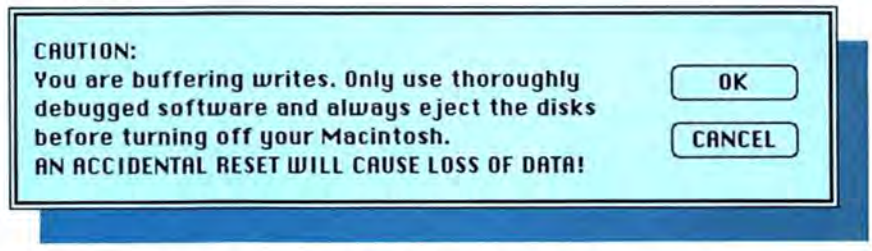
For example, *TurboCharger* tries to keep the *Finder* in its cache all the time, causing quitting to the desktop to become nearly instantaneous and without any disk accesses at all. *MacBooster*, on the other hand, opens new documents and applications faster, but is somewhat slower quitting.



The *TurboCharger* must be configured before its first use by selecting values on this control panel. The (OFF) option is often valuable, allowing users to run memory-demanding programs such as *ThinkTank512* from a *TurboCharged* system disk.



MacBooster's control is also intuitive and simple to use. Be sure not to exceed the suggested maximum cache size, which the program calculates for you.



Write buffering can be dangerous. Users who want to use write buffering must OK this *TurboCharger* dialog.

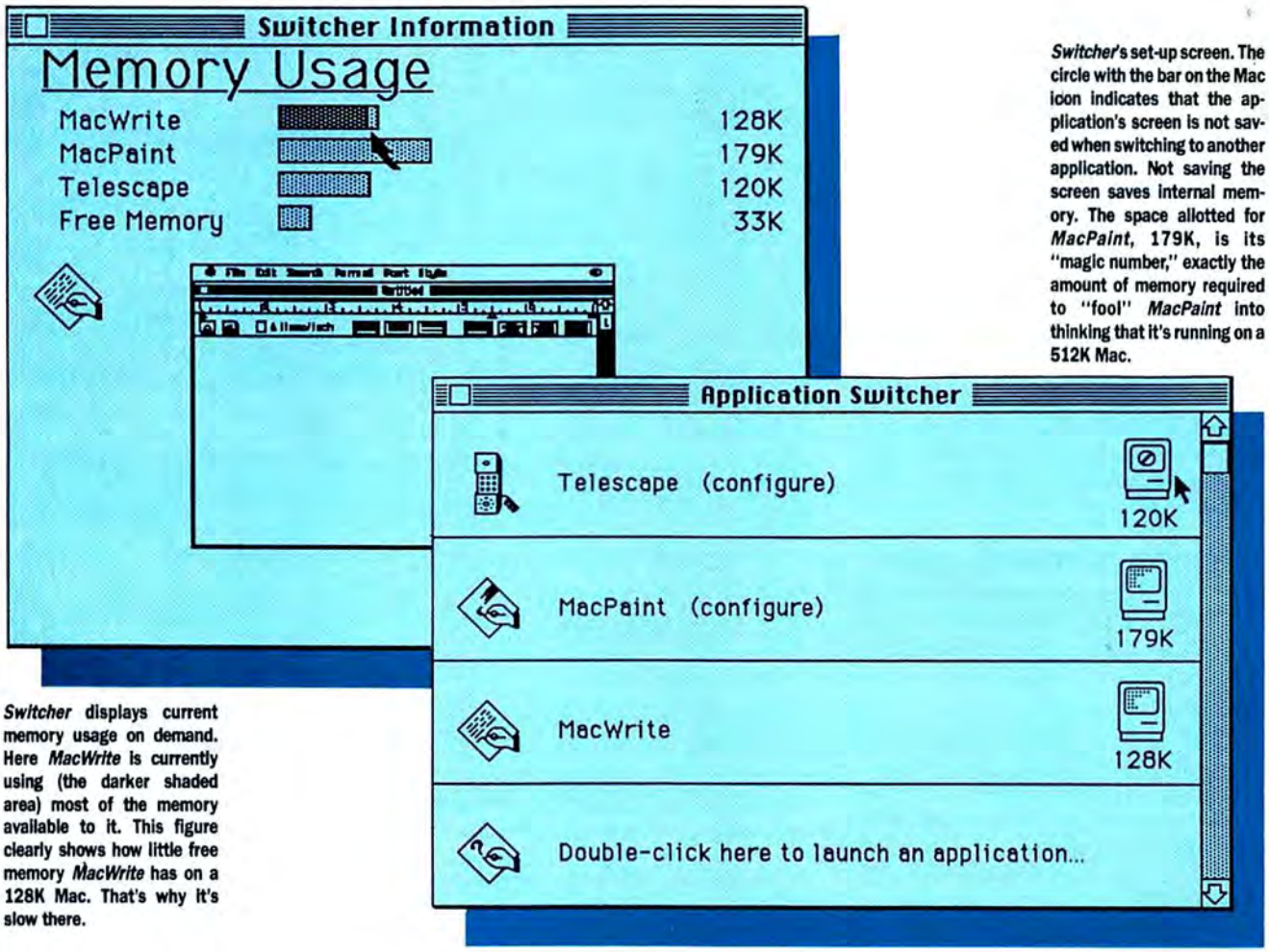
MacBooster is less expensive than *TurboCharger* but also less convenient to use. *MacBooster* wants slightly more disk space for itself and can not be used with many copy-protected disks. *TurboCharger* works with all software with the exception of *ThinkTank 512* or similar programs which want all of memory for themselves. Neither product currently works on a Mac XL or on hard disks although both programmers promise upgrades to eliminate that limitation.

When a disk cache is first installed a buffer size must be selected by the user. *TurboCharger*'s 256K default value seems optimal for most uses, although large programs like *Jazz* require much smaller buffers.

MacBooster has a much larger default value; set it back to 256K for optimal performance in most cases. *MacBooster* will also run with a RAMdisk installed on the same disk. Don't do this unless your Mac has at least a megabyte of RAM. Running both a cache and a RAMdisk on a 512K Mac restricts the size of each so much that neither is effective and memory is simply wasted.

TurboCharger also allows users the

GETTING UP TO SPEED



Switcher's set-up screen. The circle with the bar on the Mac icon indicates that the application's screen is not saved when switching to another application. Not saving the screen saves internal memory. The space allotted for *MacPaint*, 179K, is its "magic number," exactly the amount of memory required to "fool" *MacPaint* into thinking that it's running on a 512K Mac.

Switcher displays current memory usage on demand. Here *MacWrite* is currently using (the darker shaded area) most of the memory available to it. This figure clearly shows how little free memory *MacWrite* has on a 128K Mac. That's why it's slow there.

option of write buffering data. Normally disk-caching programs immediately write all data generated to the disk so that nothing is lost in the event of a crash or a power failure. These repeated disk accesses slow the programs down a bit. If write buffering is selected an area of the buffer is used to hold data. Only when that buffer is filled is that data passed on to the disk. Thus the data is volatile until the buffer is filled and flushed to the disk.

MacBooster's author felt that write buffering is dangerous and he does not permit it. *TurboCharger* allows it, but forces acknowledgement of an explicit warning when this feature is activated.

Cost No Object

An expensive but often effective way of increasing speed is to acquire a hard disk. Hard disks increase the speed of operations in two ways. Disk reads and writes are much faster—the slowest will still provide a 300% increase in disk read/write times, and 1000% increases are typical of units such as General Computer's *Hyperdrive*.

Another and often overlooked benefit of hard disks is the lack of disk handling. No more swapping—no more multiple disk operations. After the hard disk is set up, the only time a disk should be inserted is to satisfy some copy protection requirement or to make backups. Backups, particularly of data, are very important and should be made regularly. They are not quick and easy, however.

If your applications handle large amounts of data and large datafiles, a hard disk is probably necessary for proper program operation. Right now the hard disk is too expensive to be considered as a solution if more speed is all that is desired. If you do opt for a hard disk be sure to get one that comes with a good print spooling accessory.

Speed Tomorrow

There's a lot more speed in the Mac's future. There'll be CPUs that run at least 50% faster than the 68000 now does; there'll be large-capacity (20-megabytes and more) hard disks with both built-in disk caching and printer spooling; there'll be MegaMacs and monster Macs with megabytes of memory so that RAM-disks and caches and print spoolers can all exist together. Apple will release a ROM upgrade for current Macs that will contain many of the resources that currently run from RAM, and will have a new, improved file structure. The long-promised double-sided disk drives will arrive and will be much faster than the current drives.

And the Mac will go supersonic!



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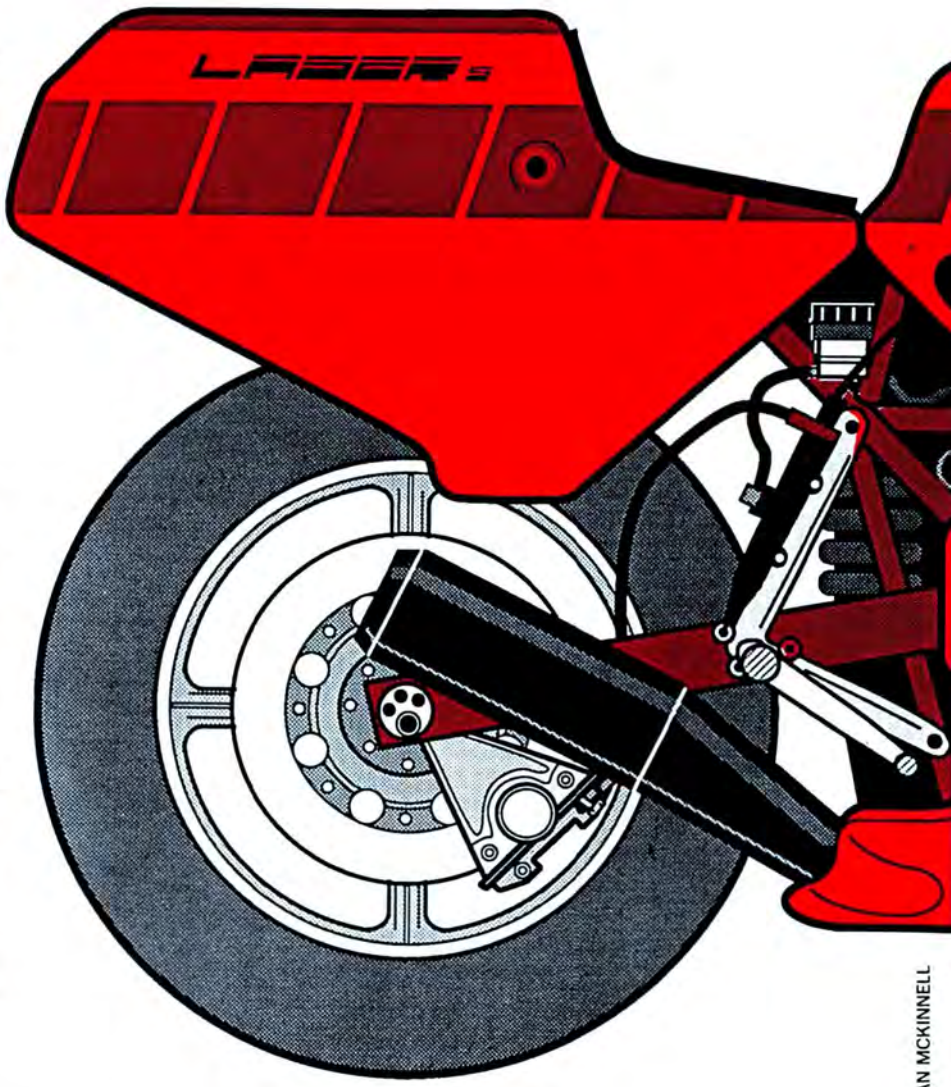
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MASTERING

A step by step guide to achieving your own professional graphics.

WHY BUY *MACDRAW* WHEN *MACPaint* is free? Because *MacDraw* overcomes many of *MacPaint's* shortcomings, and the two programs complement each other. Although in some very simple cases both programs can achieve the same results, the way in which each creates an image is very different. Basically, *MacPaint* offers a loose, freestyle way of working on a fairly small scale. *MacDraw* imposes a more structured, technical approach—on any scale.



IAN MCKINNELL

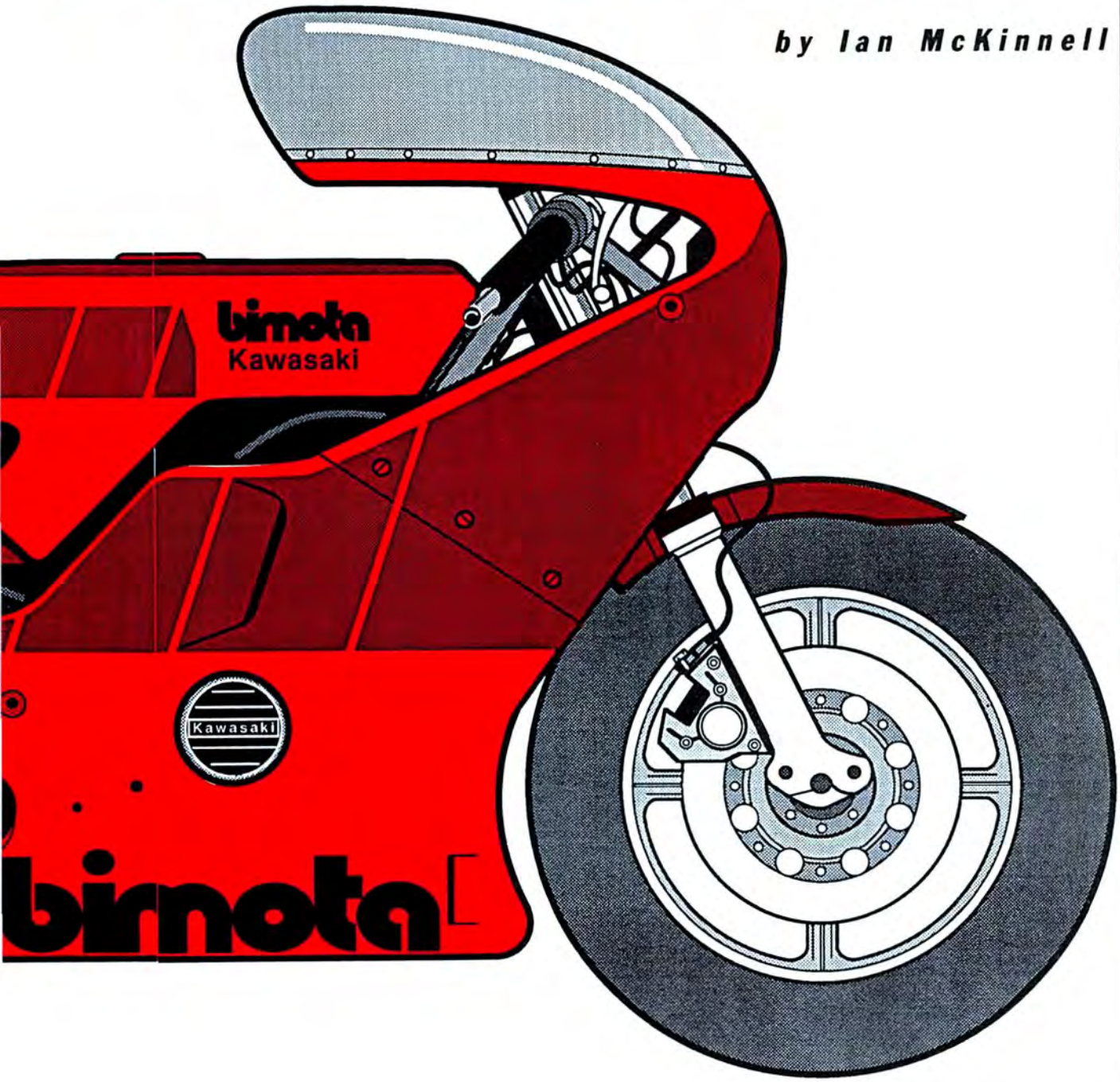
Attributing the Difference

MacDraw and *MacPaint* each have a different way of recognizing images on screen. *MacPaint* produces "bit-mapped" images—that is, in memory, they are exactly as they appear on the screen; a series of pixels that are either black or white. Once a circle is drawn in *MacPaint,* the program no longer recognizes it as a circle, but rather sees it as a collection of black pixels. For this reason, a *MacPaint* image can never look better than it does on the screen, even when printed out on the LaserWriter.

MacDraw, however, stores shapes by their "attributes." Rather than storing a number of pixels, it recognizes a circle

MACDRAW

by Ian McKinnell



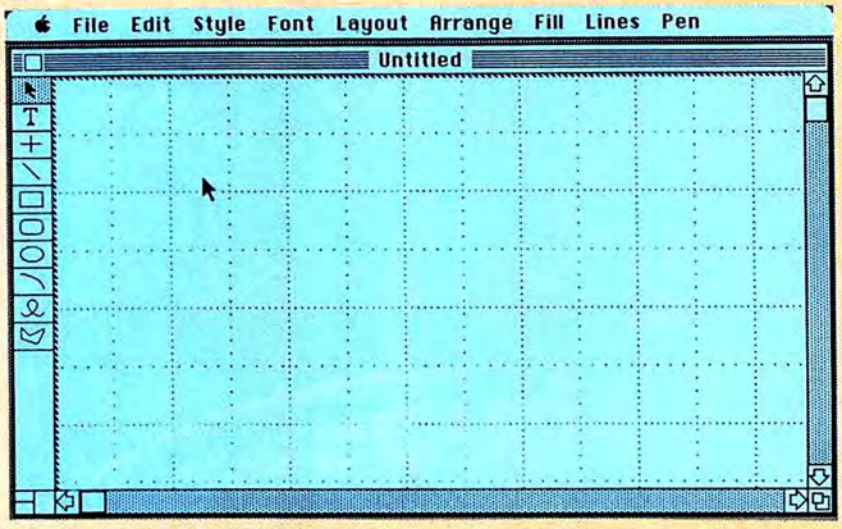
of height X and width Y, with a certain line thickness, filled with a given pattern, and in a particular position on the drawing area. So when a *MacDraw* document is printed on the LaserWriter, information about a circle is sent to the LaserWriter in a form which the printer can then convert into its own much higher-resolution image. Even with the humble ImageWriter set to print high quality, the resulting printout looks considerably better than *MacPaint* can produce. This method of working with attributes also means that *MacDraw* can be used with plotters, an impossible dream for *MacPaint* users.

MacPaint has a limited page size because its way of storing images, as bit maps, uses large amounts of memory and disk space. On the other hand, *MacDraw* documents are usually very small; most average out at around 4K or less, though there are exceptions, especially when complex polygons are used. The Bimota motorcycle drawing, for instance, is a mere 22K document, despite the fact that there are some 549 separate objects involved.

It's possible to paste *MacPaint* images into "*MacDrawings*," offering the best of both worlds. Images can also be pasted in from other popular programs, like *Chart*, *MacWrite*, and *MacVision*. The latter is a particularly useful facility, since, if you have some form of reference material for your drawing, digitizing it and pasting it into *MacDraw* means that you can work on top of it, tracing the outlines. When complete, the digitized image can be deleted easily, leaving the outline intact. In *MacPaint*, removing the original digitized image would involve a great deal of work in FatBits.

Images can also be copied from *MacDraw* and pasted into other programs. One advantage of pasting drawings into *MacWrite* is that the images can be resized without any loss of quality, since they're still stored as attributes. This is *not* true when *MacDrawings* are pasted into *MacPaint*, however, since *MacPaint* instantly converts pictures into bit maps.

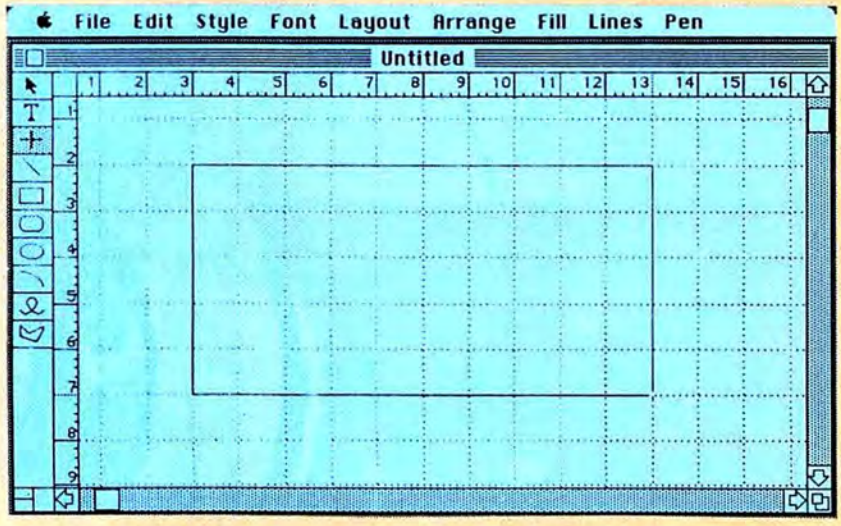
One important feature that *MacDraw* lacks is the ability to rotate objects a single degree at a time, instead of in 90 degree steps as at present.



Starting Off

After double-clicking the *MacDraw* icon, the screen presents a full size "proper" window, complete with scroll bars, resizing facilities, and all the expected aids. The left-hand side of the window has icons representing the drawing tools, most of which will look vaguely familiar to *MacPaint*ers.

Perhaps the most noticeable difference between *MacDraw and MacPaint*—and one that emphasizes the former's technical orientation — is the grid set up on the blank screen, which allows users to work to precise measurements. Initially, this grid (which never appears on the printed document) is set to half-inch intervals, although selecting the "Custom Rulers" option from the Layout menu lets computer artists set up a metric grid or even remove the grid entirely. There is also an "invisible" grid, much like the one in *MacPaint*, that limits the movement of the cursor. This makes it much easier to align objects to the visible grid. Again, this can be turned off if it's not needed.

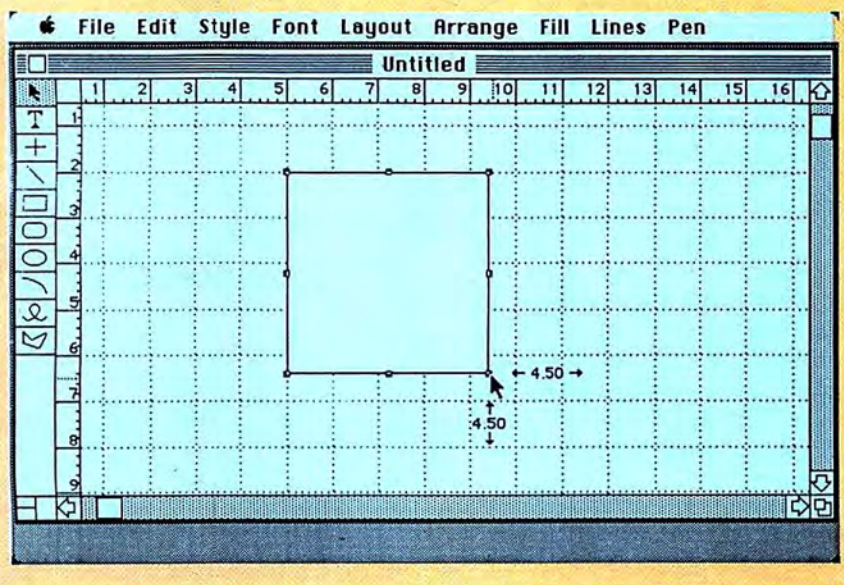


Handling Objects

Selecting a familiar tool (such as the rectangle) and drawing with it is just as easy as it is in *MacPaint*. However, once the rectangle has been drawn, the similarity ends. Select the object again (by clicking on it) and eight small black squares (called handles) appear, one at each corner and one halfway along each edge. This feature will be familiar to *Filevision* users, who will already be used to working with what is essentially a "cut-down" version of *MacDraw*.

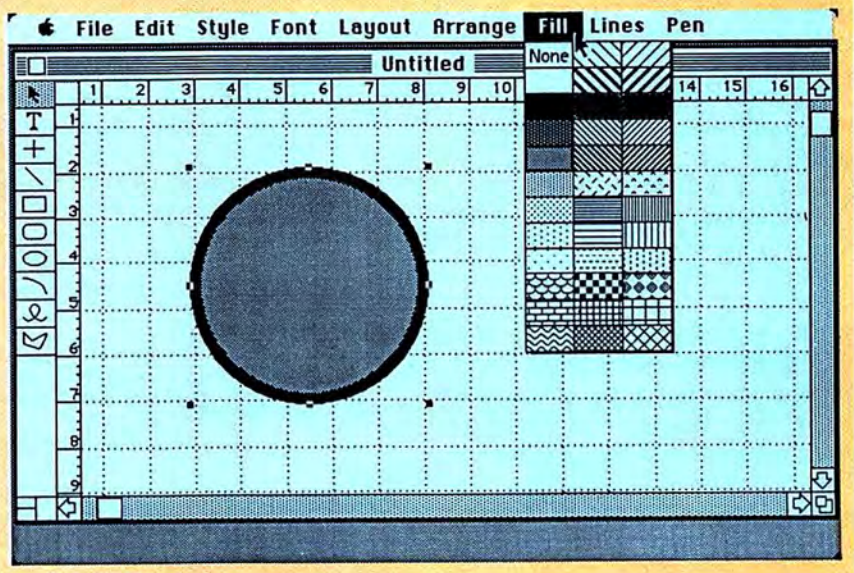
Setting Up Rulers

Selecting the Show Rulers option from the Layout menu sets up rulers at the top and left side of the window, and these can be customized quickly to whatever scale you want to work to. The position of the cursor is displayed constantly on these rulers. *MacDraw* even has an option to display numerically the dimensions of the shape being drawn at the side of the cursor. In this way, drawing a box that is, say, 2 inches by 2 inches, positioned 1 inch down from the top of the paper and 2 inches in from the edge of the paper, takes but a fraction of a second to carry out.



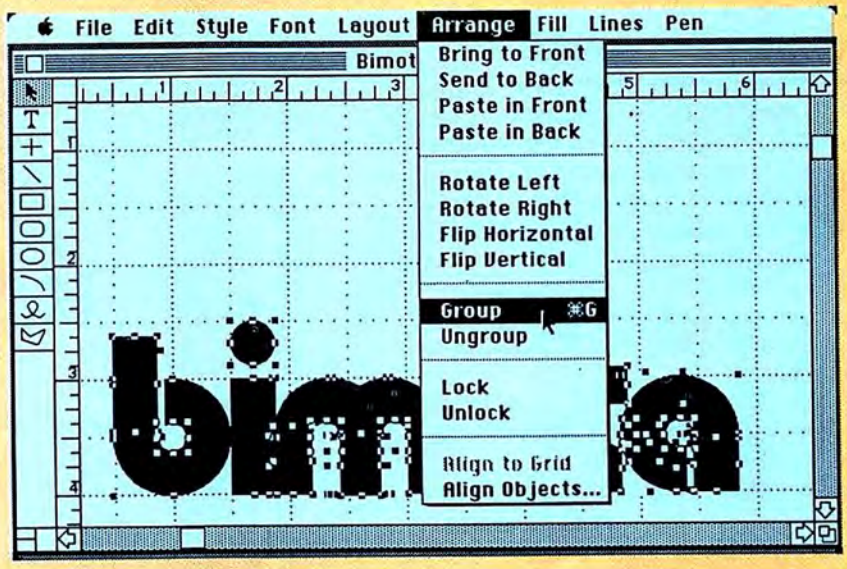
Resize and Fill

Picking up one of these handles and moving it resizes the object; if you move a corner handle, the object is changed in both dimensions. If you grab an edge handle, the object is altered in just that direction. This method of reshaping is consistent for all objects—even small groups of objects; if you select a very small object, the middle handles are not drawn. As in *MacPaint*, pressing the Shift key while drawing an oval or rectangle produces an exact circle or square. When an object is highlighted, the thickness and pattern of the outline can be altered, together with the "Fill" pattern, chosen from the Fill menu. There are 35 different patterns available, but unlike *MacPaint*, these patterns can't be edited.



Grouping Objects

Because of the way *MacDraw* handles shapes (usually referred to as "objects"), each can be treated or manipulated separately, and enlarged or reduced to any scale without losing quality. It is also possible to group objects together so they can be manipulated as if they were one, after which they can be separated and moved individually. Among *MacDraw*'s other powerful facilities is the "Align Objects" option, where any number of selected objects can be lined up in any way, such as by their right or left sides or tops. Another option, "Round Corners," offers a number of different on-screen radii to the user.



MASTERING MACDRAW

Text Talk

MacDraw's handling of text is not all that users would hope for. Within a particular block of text, it's not possible to vary elements such as fonts, styles, size and so on. Paragraphs of text can be resized, but the procedure is clumsy. For example, if a block of text is pasted in from *MacWrite,* all formatting except for paragraph indents is lost and the text appears in a single long line. It can be transformed back to its original state by going through it and inserting returns, but that's a lot of work.

There is a quicker way around the problem: First, the text needs to be copied or cut. But don't select it in the normal way using the arrow pointer—instead, try *triple*-clicking the text with the text editing tool. Then a rectangle of the appropriate width should be drawn and, while still selecting this rectangle (by keeping the mouse button pressed), type any two letters. Next, the text should be pasted so that it conforms to the width of the rectangle. It can now be reshaped into the size you want.

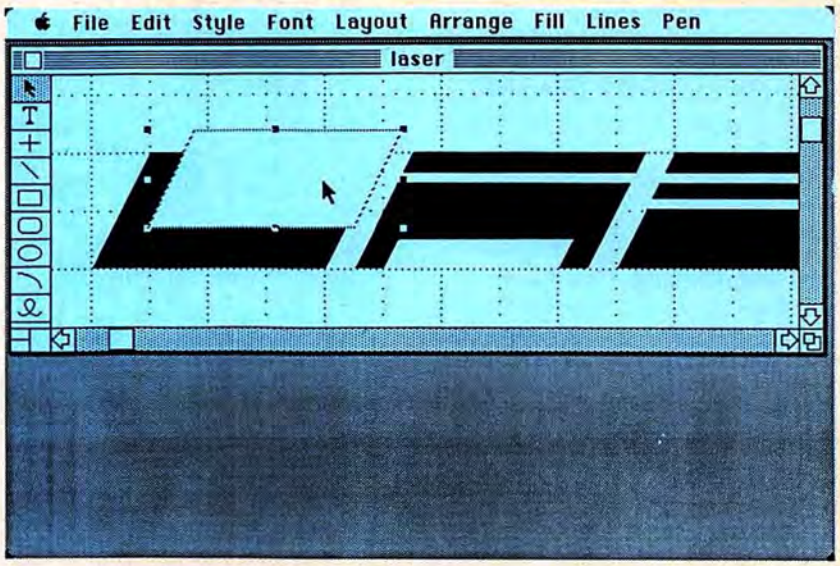
This method of working with text is particularly vital, since an application of *MacDraw* is to use it as a "rough and ready" page make-up tool. It may not be as complete as dedicated programs like *Pagemaker,* but *MacDraw* does allow users to manipulate text and graphics on screen — the name of the game in page design.

Getting into Print

A number of important extras are included on the disk. The System files provided are LaserWriter compatible. That's very important because *MacDraw* is an ideal program for the LaserWriter. It can take full advantage of the Laser Writer's high resolution output to produce images that few people would ever suspect were produced by a computer.

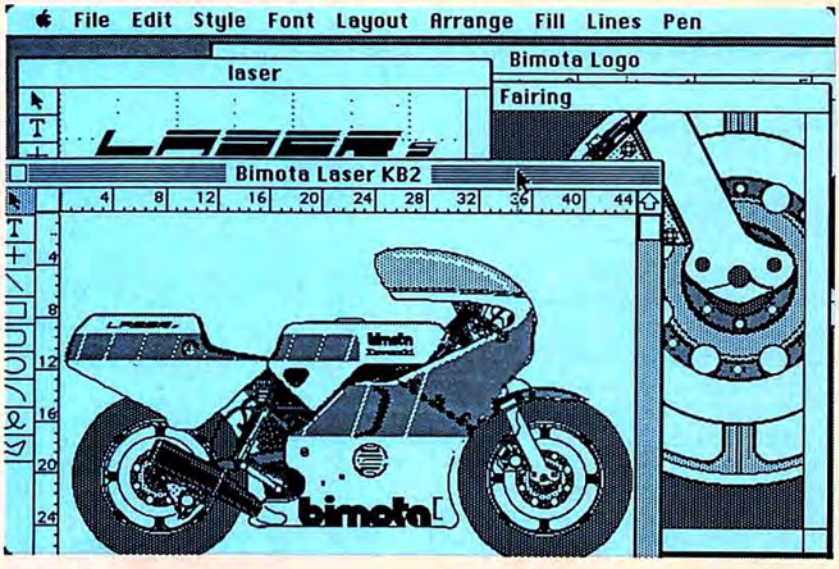
The *MacDraw* disk also contains an upgraded ImageWriter driver. This new driver allows full use of the 15-inch ImageWriter, printing at 50% reduction, and is useable with most other programs.

(continued on page 151)



Arranging Objects

MacDraw simulates operation in three dimensions in that each object is on its own particular plane: an object can be referred to as being "in front" or "behind" other objects onscreen, and any number of objects can be "stacked" in this way. This is best seen when the program redraws an image, starting with the objects at the back and building up until it completes the image "in front." Using this facility, it is also possible to construct pseudo-animation, using a succession of drawings stacked up on top of one another.

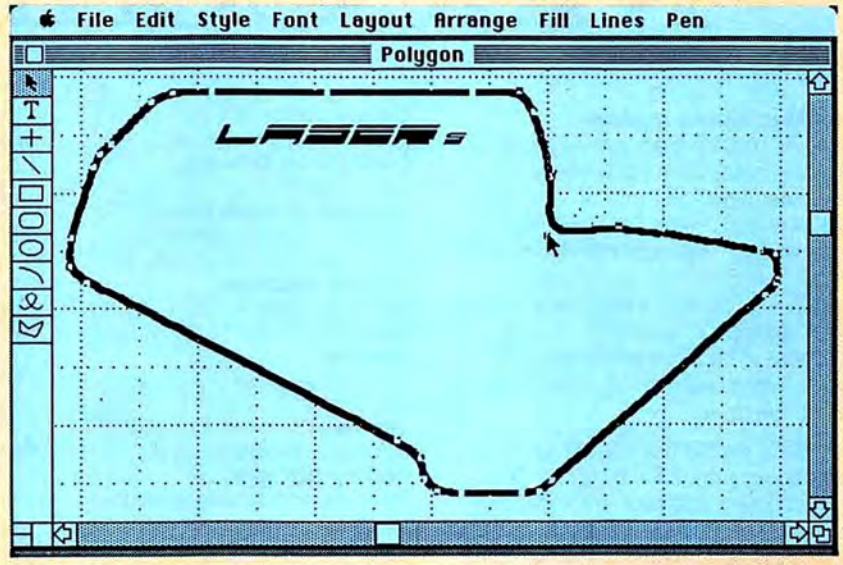


Viewing Objects

The program allows up to four documents to be open at any one time. This means you can use one document to store commonly used symbols, which can then be pasted into new drawings. Or one document can be used as a sketch pad to work on elements which can then be copied and pasted to the main drawing. This facility means that the scrapbook is only needed to transfer drawings or text from other programs, like *MacWrite* or *MacPaint.*

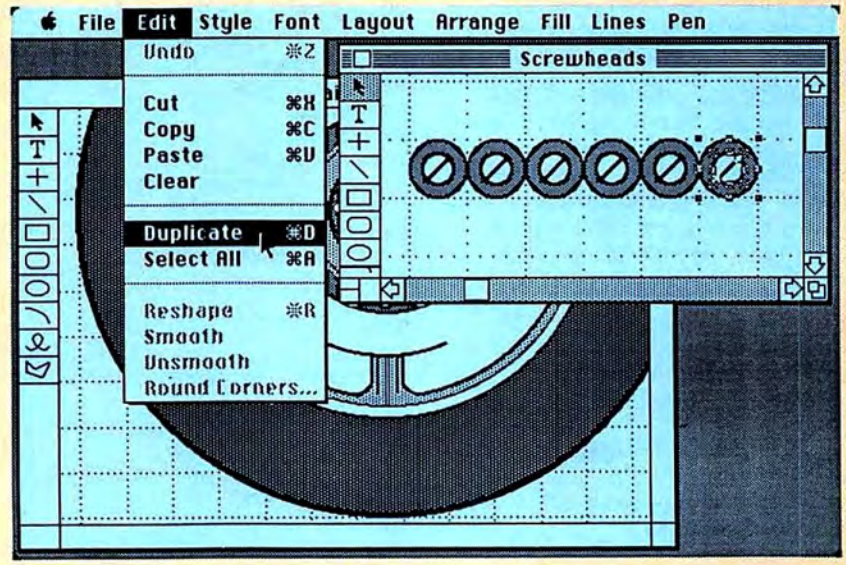
Reshaping Polygons

One of the most useful tools in *MacDraw* is the "polygon" (the bottommost of the nine icons). Using this tool any shape can be outlined, with a straight line leading from the first handle to wherever you click for the second, and then to the third, and eventually back to the starting point. Once drawn, a polygon can be manipulated in any number of ways. It can be smoothed, so that a fluid line flows between the handles, and any of the handles can be moved to reshape the outline. This technique is called rubber-banding, and if you see it working you'll know why!



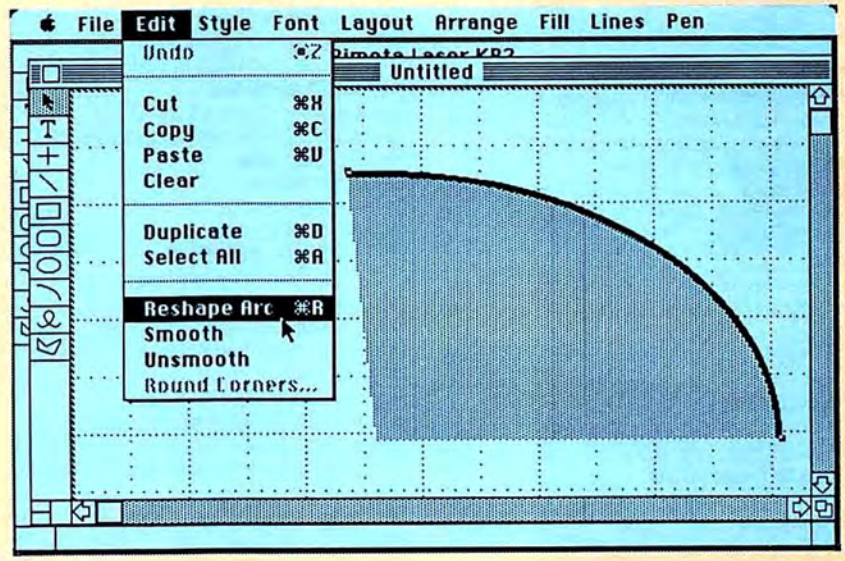
Duplicating Objects

Any object, or group of objects, can be quickly duplicated by selecting them (more than one object or goup can be selected by pressing the Shift key) and choosing the "Duplicate" option from the Edit menu. This is a much more powerful system than *MacPaint*, and is "intelligent": if you move the first duplicated object to the exact position in relation to the original you require, and then duplicate it, the new copy will be placed in exact relation to the first copy, as the first copy was in relation to the original.



Using the "Arc"

A particularly interesting tool is the Arc (the third icon up from the bottom of the on-screen toolbox). Initially, this draws a quarter circle of whatever size you choose—and this can then be reshaped to suit. Try filling the shape with a pattern from the Fill menu and you end up with something that looks like a slice of cake on screen, ideal for constructing pie charts and the like.



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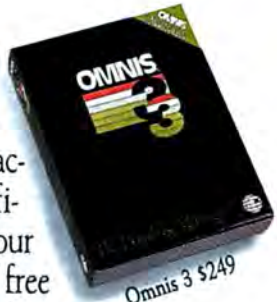
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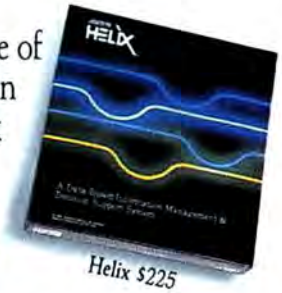
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BrainPower
StatView *(statistics package)* 109.
Casady Company
Fluent Fonts *(two-disk set)* $29.
Central Point Software
Copy II Mac 20.
Computer Software Design
MacLion *(relational database)* 189.
External drive recommended.
Creative Solutions
MacForth - Level 1 79.
MacForth - Level 2 129.
DataFood
DrawForms 30.
MacForms 42.
DataVis
MacLink with cable 89.
Desktop Software
1st Port *(communications software)* 49.
1st Merge 49.
1st Base 99.
Digital, Etc.
Maccountant 139.
Full-featured accounting program.
Dilithium Press
PC to Mac & Back 85.
Dow Jones
Straight Talk 45.
Spreadsheet Link 57.
Must have Multiplan, modem and Dow Jones Straight Talk.
Market Manager PLUS 109.
Track portfolio information.
Enterset
Quickpaint 30.
Quickword 36.
Quickset 55.
Icon-driven true accessory with powerful calculations.
1st Byte
Smoothtalker *(version 2.0)* 59.
Voice synthesis software for the Mac.
Forethought
Typing Intrigue 31.
Factfinder 86.
FileMaker 109.
Great Wave Software
ConcertWare+ 39.
Compose and listen to your own songs.
Harvard Associates
MacManager *(business simulation)* 29.
Desktoppers *(new desk accessories)* 29.
Hayden Software
DaVinci Buildings 29.
DaVinci Interiors 29.
DaVinci Landscapes 29.
DaVinci Building Blocks 46.
DaVinci Commercial Interiors 115.
Art Grabber with Body Shop 30.
Turbo Turtle 36.
I Know It's Here Somewhere 36.
Musicworks 46.
Hayden:Speller 47.
For MacWrite 4.5 and Microsoft Word.
Score Improvement System for the SAT 59.
College entrance-exam study guide.
Videoworks 59.
Ensemble 155.
Hayes
Smartcom II *(communications software)* 89.
Hippopotamus Software
Hippo Computer Almanac $21.
Hippo-Lock *(file security program)* 69.
Hippo-C - Level 1 79.
Hippo-C - Level 2 219.
Upgrade Hippo-C Level 1 to Level 2 139.
Human Edge Software
Mind Prober 29.
The Communication Edge 99.
The Management Edge 129.
The Sales Edge 129.
The Negotiation Edge 149.
Ideaform
MacLabeler *(print disk labels)* 29.
Innovative Data Design
Paste-Ease 37.
MacDraft 159.
Kensington
Graphic Accents 30.
Professional Type Fonts for Text 30.
Professional Type Fonts for Headlines 42.
Requires 512k.
Layered
Front Desk 79.
Linguist's Software
Tech *(1000 different symbols)* 69.
MacCyrillic 69.
MacHebrew 69.
MacKana/Basic Kanji 69.
MacKorean 69.
MacSuperFrench/German/Spanish 69.
MacSuperGreek 69.
MacGreek/Hebrew/Phonetics 119.
Living Videotext
ThinkTank 128k 75.
ThinkTank 512k 125.
Magnum
McPic - Volume I 30.
McPic - Volume II 30.
The Slide Show Magician 36.
Manhattan Graphics
Ready Set Go 2.0 *(requires 512k)* 69.
Mark of the Unicorn
Professional Composer *(requires 512k)* 249.
Microsoft
Entrepreneur 32.
Learning Multiplan and Chart 39.
Chart 75.
Logo 75.
Basic *(version 2.0)* 89.
Multiplan 107.
File 112.
Word 112.
Business Pack 342.
Includes Word, File, Chart, and Multiplan.
Miles Computing
Mac the Knife - Volume 1 23.
Mac the Knife - Volume 2 27.
Monogram
Forecast 41.
Dollars & Sense 82.
Nevins Microsystems
Turbocharger 57.
Odesta
Helix 225.
Requires 512k and external drive.

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Organizational Development Software
Consultant $119.
Paladin
Crunch *(requires 512k)* 169.
Palantir
MacType *(supports Dvorak keyboard)* .. 31.
MathFlash *(math flash card drills)* 31.
WordPlay 31.
Accounts Receivable 79.
General Ledger 79.
Inventory Control 79.
Peachtree
Back to Basics General Ledger 89.
Accounts Payable 89.
Accounts Receivable 89.
ProVUE Development
OverVUE *(version 2.0)* 149.
QED Information Sciences
Typing Made Easy 36.
RealData, Inc.
Real estate and financial analysis templates. You must have Multiplan or Jazz to use.
Financial Analysis 65.
Commercial/Industrial Applications 65.
Residential Real Estate 65.
Real Estate Investment Analysis 89.
On Schedule 119.
Tax Shelter Syndication Analysis 179.
Reston Publishing
You must have Multiplan to use.
Construction Estimator 45.
Scarborough Systems
Mastertype 29.
Sierra On-Line
MacOneWrite *(cash disbursements)* .. 139.
Silicon Beach Software
Accessory Pak 1 24
Simon & Schuster
The Mac Art Department 24.
Paper Airplane Construction Kit 24.
Typing Tutor III 31.
Software Publishing
PFS:File/Report 105.
State of the Art
Electric Checkbook 45.
Symmetry
Quick Disk 24.
T/Maker
Click Art Personal Graphics 30.
Click Art Publications 30.
Click Art Letters 30.
Click Art Effects 30.
ClickOn Worksheet 47.
Telos Software
Filevision 99.

Think Educational
Mind Over Mac $31.
Five challenging games.
MacEdge II 31.
Learning programs in math and reading.
Videx
MacCalendar 52.
Mail Center *(2 users)* 179.
Mail Center *(6 users)* 289.
Warner Software
The Desk Organizer 55.

GAMES

Aegis Development
MacChallenger 29.
Space Shuttle Flight Simulation.
Axlon
MacMatch 31.
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Hitchhiker's Guide *(standard)* 24.
Planetfall *(standard)* 24.
Wishbringer *(standard)* 24.
The Witness *(standard)* 24.
Zork I *(standard)* 24.
Zork II *(advanced)* 27.
Zork III *(advanced)* 27.
Infidel *(advanced)* 27.
Sorcerer *(advanced)* 27.
Suspect *(advanced)* 27.
Deadline *(expert)* 29.
Starcross *(expert)* 29.
Suspended *(expert)* 29.
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Mouse Stampede *(highly addictive)* 23.
Miles Computing
MacAttack *(3-D tank simulation)* 29.
Harrier Strike Mission 29.
Mirage Concepts
Trivia *(new low price)* 19.
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Sierra On-Line
Frogger 24.
Ultima II 35.
The ultimate fantasy role-playing adventure.
Silicon Beach Software
Airborne! *(great graphics and sound)* .. 21.
Soft-Life Corp.
Mac-Slots 25.
The best one-armed bandit going!
Spectrum Holobyte
GATO *(submarine simulation)* 27.
Telarium
Amazon 27.
Dragon World 27.
Farenheit 451 27.
Videx
Funpak 23.
Klondike and King Albert Solitaires, Sevens, and Four in a Row.
MacCheckers/Reversi 29.
MacGammon/Cribbage 29.
MacVegas 34.

HARDWARE

Assimilation
Mac-Epson-Connection 59.
Mac-Port-Adaptor 59.
Mac-Daisywheel-Connection 69.
Mac-Turbo-Touch 89.
Compucable
Mac to Hayes Smartmodem cable 17.
Mac to Epson FX/RX/JX printer cable .. 17.
Cuesta Systems
Datasaver AC Power Backup call
Keeps Mac operating. 90 watts.
Curtis Manufacturing
All surge suppressors have an on/off switch.
Diamond *(6 outlets)* 28.
Emerald *(6 outlets; 6 ft cord)* 34.
Sapphire *(3 outlets; EMI/RFI filtered)* ... 44.
Ruby *(6 outlets; EMI/RFI filtered; 6 ft cord)* 50.
Epson
FX-85 call
FX-185 call
JX-80 call
LX-80 call
LQ-1500 *(letter quality dot matrix)* call
Hayes
Smartmodem 300 call
Smartmodem 1200 call
Smartcom II *(communications software)* 89.
Compucable's Mac to Smartmodem cable 17.
IOMEGA
Bernoulli Box *(5-megabyte storage)* .. 1319.
5-meg Cartridge 39.
Head Cleaning Kit 59.
Johnathon Freeman Designs
Universal Printer Buffer 175.
Kensington
External Disk Drive Cover 8.
Mouse Pocket 8.
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Mac XL Dust Cover 10.
Imagewriter Dust Cover 10.
Wide Imagewriter Dust cover 10.
Universal Printer Stand 17.
Mouse Cleaning Kit w/Mouse Pocket ... 16.
Disk Case *(holds 36 Mac disks)* 20.
Disk Drive Cleaning Kit 20.
Tilt/Swivel 23.
Polarizing Filter 32.
Surge Suppressor 34.
Starter Pack *(includes Tilt/Swivel)* 54.
A-B Box 60.
Control Center 65.
Modem *(300 baud)* 89.
Koala Technologies
MacVision *(digitizer)* 175.
Kraft
QuickStick 45.
Microcom
MacModem *(Hayes compatible)* 469.
Upgradeable to 2400 baud.
Microsoft
MacEnhancer 159.
Additional ports and terminal software.
Mitsuba
Super 5 External Drive 239.
Mouse Systems
A+ Optical Mouse 59.
Paradise Systems
Mac 10 *(10 megabyte hard disk)* 1029.
Superex Business Software
MacSpeak *(external speaker)* 15.
MacSpeak *(with earphone jack)* 18.
Systems Control
MacGard 55.
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DISKS

Innovative Concepts
Flip & File *(Holds 40 disks)* 19.
Pacific Wave
Flip Sort Micro *(Holds 40 disks)* 12.
Flip Sort Micro *(Holds 60 disks)* 15.
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The Source *(subscription & manual)* ... 30.

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Microsoft Multiplan: Of Mice and Menus. 12.
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MacWork MacPlay 14.
The Apple Macintosh Book 14.
Presentation Graphics on Apple Mac .. 14.
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HEY, BIG SPENDER!

Futures? Big Business? Commodities? An investment in these Mac simulations could pay big dividends in fun.

By Tracie Forman Hines

IN LESS THAN TWO YEARS, Michael, an elementary school teacher, took over four of the five industries on Wikki Wikki Island. Although with a net worth of nearly eight million dollars he could easily afford to buy up all the stock in the last remaining company, he was having trouble getting his major competitor to sell. "I figure I'll raise the price of his supplies and cut demand for his products," chuckled Michael. "That ought to force him off the island once and for all!"

Jeff, an accountant, wasn't able to talk to us for long. He had just lost nearly $30,000 on a bad lumber deal and was frantically buying options on pork bellies to recoup his losses — before he left for work.

Public relations aide Stephanie was trying to decide whether or not to buy a free-standing medical building in Wichita. "It's got a negative cash flow," she explained, "But Hewlett-Packard is setting up offices in the area, so property values ought to go sky-high."

These people aren't rich. They're as financially insecure as most of us are. What they have in common is a love of the Mac — and an interest in financial simulations. Simply put, money games are *hot*.

Would-be Wall Street wizards can test and hone their decision making skills and their abilities to predict future payoffs, without having to risk a cent of real cash. These programs are more than just games — they can help potential investors get comfortable with the world of high finance.

One of the first games to come to market for the Mac, *MacManager* (Harvard Associates) involves cut-throat competition between widget manufacturers. Blue Chip Software's entire line of software revolves around financial simulations of different types. Tom Snyder, well-known in the educational game field for hits as diverse as *Snooper Troops, Agent USA* and *Run For the Money* (a children's introduction to the theories of supply and demand), has turned his attention to big business

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HEY, BIG SPENDER!

strategies in *Make Millions* (Scarborough). The genre has proved so popular that more financial strategy games are on the drawing boards at a lot of major companies.

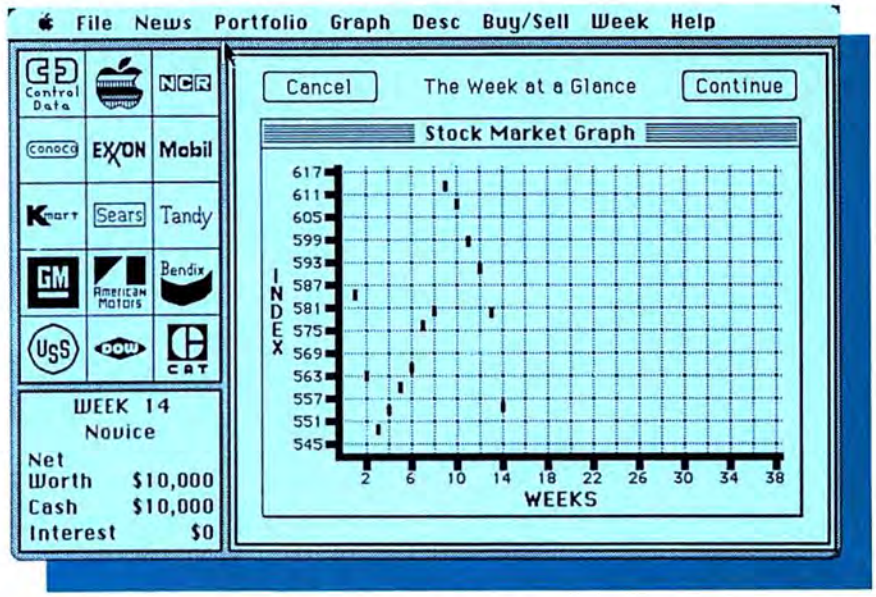
"Playing" the Market

Blue Chip Software built its own financial empire with its line of investment simulations, *Millionaire, Baron, Tycoon* and the forthcoming *Squire*. The programs all share the same basic play-mechanic, strategies and structure, while the topics range from the stock market to real estate brokerage to commodities trading.

The programs can be bought for any popular microcomputer, but the Mac editions are unquestionably the best. The other editions of *Millionaire, Tycoon* and *Baron* consist of simple bare text embellished with illustrative charts. The player gets the feel of the game only through reading the text. But the desktops of the Mac versions are alive with graphics. Each type of commodity (or stock or property) is illustrated with an icon at the left side of the screen that, when selected, automatically puts the player in mode to see price changes, buy or sell, or get information about that item. (On other computers, the route is more circuitous, requiring players to type in a series of letters that represent what they want to do.)

In *Millionaire*, the object is to amass a fortune by buying stocks low and selling them high. Weekly market fluctuations are the result of whatever the fictionalized Financial Journal has reported on in recent weeks. Only by paying careful attention to the news — and analyzing how it will affect the price of various companies' stocks (including Apple Computer) — can a player start out with $10,000 and turn it into a cool million.

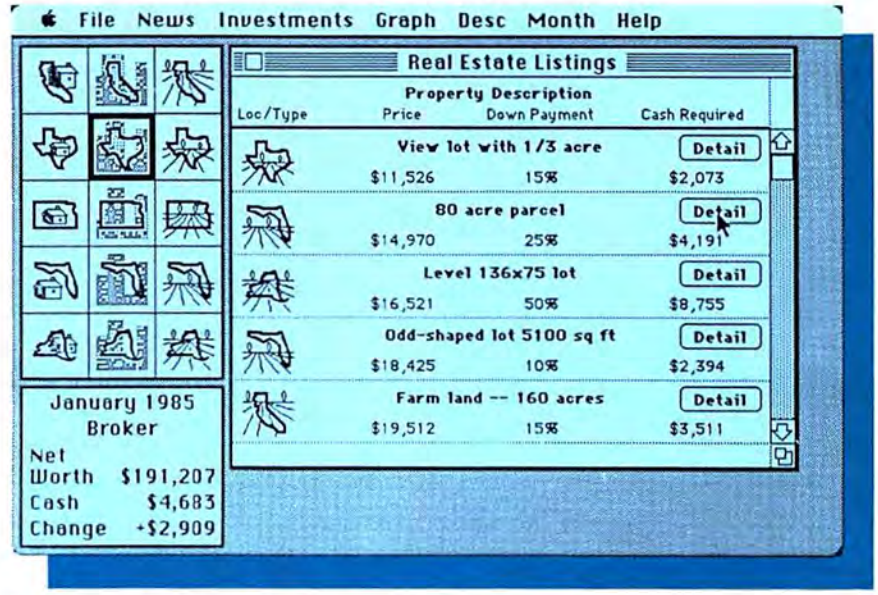
Tycoon introduces users to the confusing world of commodities trading. Starting with a pittance, the player's objective is to build a financial empire by trading essentials like orange juice, cattle and pork bellies, moving up to commodities like coffee and cocoa and, later, to such esoteric items as Swiss francs, Japanese yen and gold. The simulation offers high-level players the option of buying long (betting the price of a commodity will rise) or short (betting it will fall). As in *Millionaire*, the Financial Journal provides the clues as to future prices of all commodities.



Millionaire's **desktop can hold a wide array of charts and graphs. The overall Stock Market Graph (shown) reflects current market-wide trend. By choosing a corporate icon and the graph function from the menu, company-specific graphs may be generated and the canny player can compare to the overall market in order to detect stock trends.**

Baron offers a glimpse into the offices of land barons like Donald Trump and Leona Helmsley. As in the other games, investors start out with a small sum, barely enough to buy a few acres of land, and must eventually trade up to sprawling ranch estates and shopping malls, again with the assistance of their trusty Financial Journal. The key to the game is patience, since players who buy and sell at frenzied paces end up losing much of their capital on closing costs and fees. Unfortunately, run-down properties can't be renovated, and you can't hike the rent on low-paying tenants, but happiness really is a full portfolio just the same.

A session of *Baron*, for example,



Ever want to be Donald Trump or Leona Helmsley? Or how about just an anonymous, millionaire land baron? The game of *Baron* gives you a piece of the rock—or at least of New York, California, Florida, Texas or Kansas. Try to move up from just a few acres to owning your own real-estate empire.

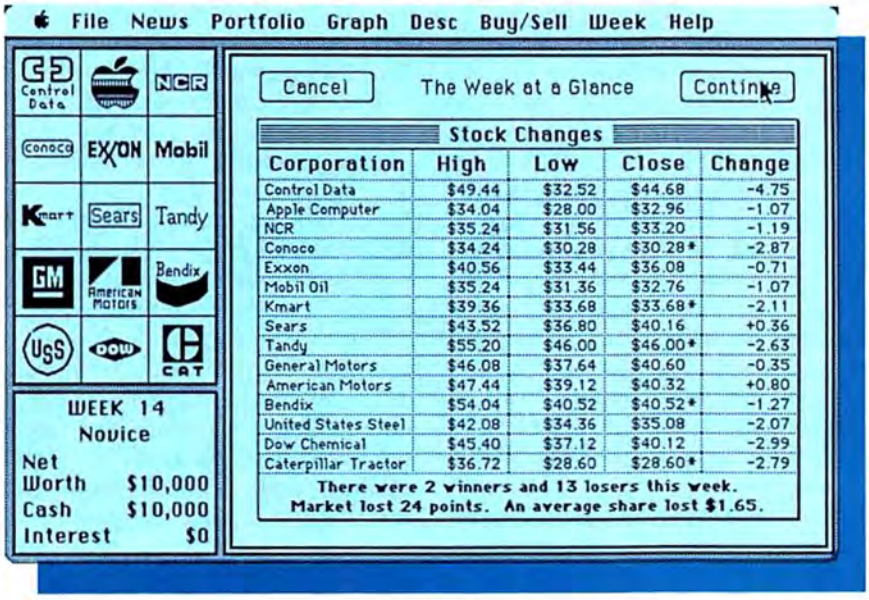
usually goes like this: First, the player is shown a graph that charts the progress of land holdings in five key markets: New York, California, Florida, Texas and Kansas. Each market has its own submarket in land properties, residential housing and business property, such as a medical building or a small shopping mall. The first graph shows a composite price of *all* types of properties; the second targets a specific area, such as California's composite.

When the charts have been displayed, next stop is the Financial Journal, which in this case might say, "HEWLETT-PACKARD TO SET UP OFFICES IN WICHITA." Afterwards, all graphs affecting properties owned by the player (California Residential, Florida Commercial, etc.) are displayed. Finally, a chart listing the current dollar values of all types of property — with an asterisk marking those at historic highs or lows — is shown on-screen, with a special column detailing the exact dollar amounts gained or lost that month.

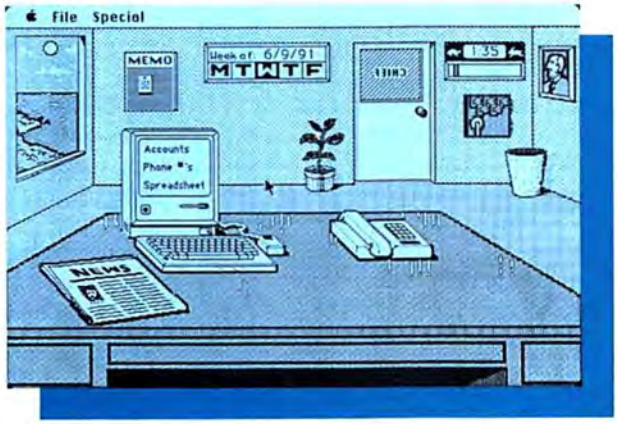
Once all the information has been presented, the user plays out all the moves he or she wants to make that month. This is the time to peruse the list of available properties, buy what you like, and option land or buildings you think may have potential. Good candidates for optioning (paying a set amount of cash which entitles you to buy at a set price for the next six months) have the potential to skyrocket in value, but may lose large sums, either through negative cash flow or because of an unstable market.

But if the real-estate market looks stagnant, the player can invest in second mortgages, or in the more risky ventures like limited real estate partnerships or even Uncle Herman's real estate project. High-risk investments are so unstable that the computer automatically deducts your investment from your net worth. If the venture pays off (it rarely does), the huge dividends are added to your fortune.

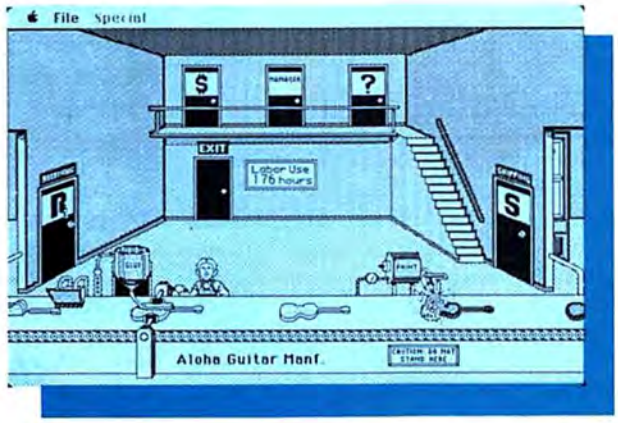
During each month, players have a few extra options: to check out their portfolio's current value; take loans against old properties to buy new ones; pay off those loans; thumb through back issues of the Financial Journal; or to see the most current charts reflecting, say, Wichita commercial properties, or New York housing trends.



Just as in the real stock market, stock prices vary and fluctuate one against the other in the *Millionaire* stock market simulation. The Stock Changes window allows a player to quickly scan the ups and downs each week.



This desktop of a different sort greets the player of *Make Millions*. Almost a role-playing game, this financial simulation tests one's corporate mettle against the machinations of the computer-run Humungous conglomerate. The successful player must gain a controlling interest in five companies, a very difficult task in the competitive atmosphere of Wikki Wikki Island.



Onscreen graphics allow *Make Millions* to have a real atmosphere of both high-finance and factory-style assembly lines. The play is quick and uses the Macintosh interface faithfully, but is still both intellectually challenging and stimulating.

Learning Economics the Easy Way

These games have enough resemblance to the real-life behavior of the various markets that they form the basis of a number of high school and

HEY, BIG SPENDER!

college economics courses. Ilene Slapin, Vice President of Blue Chip, was "surprised to learn" that the disks were being used to teach classes as young as fifth grade. Realizing the simulations' value in teaching basic economic theory, Blue Chip organized "The Blue Chip Challenge," written by Charles E. Lapp, Associate Superintendant of Schools at Community Consolidated School District 47 in Crystal Lake, Illinois.

"The Blue Chip Challenge" is billed as a comprehensive economics minicourse designed to be used in classes from 5th grade to university level. The classes are divided into teams, who play through consecutive games of *Millionaire, Tycoon* and *Baron*. Final scores are tallied, and the team with the highest ending net worth is awarded a certificate of merit based on its achievement. A complete teachers' package is available direct from Blue Chip Software, 6744 Eton Avenue, Canoga Park, CA 91303, (818) 346-0730.

Heavy Lies the Head . . .

The actual nuts and bolts of running a profitable company are explored in depth in a number of programs, including Scarborough's *Make Millions*, Harvard Associates' *MacManager*, and Blue Chip's forthcoming *American Dream*.

Make Millions, written by Tom Snyder, is such an engrossing business simulation that one might be tempted to call it a role-playing game. It seems your wealthy industrialist father urgently summoned you to his office on Wikki Wikki Island, but you arrived only to find his office deserted. The answer to the mystery lies in the office safe, which requires five different keys to open. Each key has been salted away in each of the five manufacturing plants on the island, and to acquire them you must gain a controlling interest (25,001 shares of stock) in each company.

You're not alone in your ambitions. Your rival is a well-funded conglomerate appropriately named Humungous, a gaudy, greedy, and intelligent entity who's trying to force you off the island by taking control of all its industries.

The lumber shop, woodcutting company, guitar manufacturer, distributor and music store are all up for grabs in this financial free-for-all, but there's only $250,000 in the company coffers — hardly enough to buy even a marginal interest. To earn enough money to take control of a factory, you'll have to play the stock market.

The game is displayed graphically, with each player starting out in an office. A picture of Dad hangs on the wall, the plant is wilting and needs to be watered, and your desk—complete with telephone and Mac—is all set up and ready to go. The game is played in three phases: The first goal is to acquire stock in one of the Aloha industries; next, run the factory profitably enough to raise its stock price and/or dividends (an alternate stategy is to run it badly, sell off stock, and buy back in at a cheaper price) to aquire *more* Aloha industries; and finally, figure out how to force Humungous off Wikki Wikki Island entirely.

When playing *Make Millions*, most players will learn far more about the nuts and bolts of the business world than just how to manage money. So you thought a good head for figures is all it takes to succeed? Try telling that to the manager of Aloha Music Stores, when he argues every change you make until you're ready to fire him (you can't). The larger your holdings, the more messages you'll find on the memo board. It won't take long to realize how many truly trivial questions people feel compelled to ask their bosses, and it will probably make you think twice before approaching your own employer with some minor observation.

Information unavailable in the Wikki Wikki business journal can often be had at a hefty price from Rent-A-Sleuth. If you'd rather save your cash for investment, try to be in the office when Manny the Mouth calls.

A Dog Eat Dog World

Harvard Associates' *MacManager* was revamped by Microsoft, and it's now called *Entrepreneur*. It simulates the day-to-day operations of a software business, with one to nine players competing against each other and/or the Mac by taking turns operating their own factories. Selling price, production and marketing are the keys to running a successful operation, with the relative net worth of each company displayed on-screen as progressively larger buildings.

During each turn, players step into the offices of their factories to check on the company cash flow, profit & loss, balance sheet, operations report, decision report, industry report, and current rankings of each company. Figure out the right price, manufacturing, and marketing arrangements to prosper and earn larger, more comfortable quarters; if things don't go as you'd hoped, you can always take the easy way out and resign while in the office.

While *Entrepeneur* is fun in competition against other players, it isn't strong enough to provide solo entertainment. If you plan a good strategy in the first round, there's no need to do anything else for the duration of the game! Compared to the other business and financial simulations available for the Mac, *Entrepeneur* loses out in terms of realism, complexity, and entertainment value.

Slicing a Piece of American Pie

American Dream, due out soon from Blue Chip Software, wasn't available for testing as of press time. Its basic scenario is promising: As the CEO of a major robotics manufacturing business, the player has a total of 72 months to increase the business' market share relative to the prevailing economic conditions, and to increase profitability.

Seven different department heads report directly to you on the doings of the sales, manufacturing, engineering, production, research & development, materials management, quality assurance and finance departments. Change a few variables to (hopefully!) improve the unit's efficiency, or leave it alone if it's doing well. According to Blue Chip press releases, *American Dream's* challenge is to "assimilate the business data available, decide what changes are called for and implement them" as well as is possible under varying economic conditions. As in *Make Millions*, the business operations have a momentum of their own. Make no changes, and things will continue in the same general

(continued on page 153)



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A GALAXY OF NEW GAMES

Looking for a good time? New entertainment software offers something for everyone.

by Joyce Worley

What's new in gaming? Plenty! The programs described below are set for release before the end of the year. They're so new that many were not available for hands-on review, but were previewed especially for entertainment software expert Joyce Worley. Here's a sampling of what entertainment minded Mac users can expect to find in the software goodie bag soon.

A Real Conversation Piece

Searching for a really unique conversation piece to liven up parties or meetings? *Racter* (Mindscape), taking cues from *Eliza*-like predecessors, makes idle on-screen chitchat when you're out of things to say. The program contains a databank of nearly 3000 words, phrases and cliches, and draws on these to form conversational sentences. Talk to *Racter* via the keyboard on any topic, and the computer uses its bank of catch phrases and words to respond, even picking up some of the user's remarks to echo back in the course of the conversation.

The chatter isn't guaranteed to make sense, and most computer owners have better things to do with their time and conversational arts than talk to a computer. But *Racter* nevertheless is entertaining and unusual.

RICHARD DEL ROSSO

A GALAXY OF NEW GAMES



Racter. **Mindscape**

The Electronic Garden

Computerized Gardening (Ortho Information Services) is the armchair gardener's best friend. Better than a seed catalog for generating verdant dreams, this planner guides gardeners through the intricacies of growing ornamental shrubs and flowers. Input a Zip code to establish your geographic location, and receive a listing of all the flowers and ornamental plants that grow in that area.

All the plants are filed under their parameters, so users can, for example, get listings of all the red-blooming flowers that grow in sandy soil with limited light and water which reach a height of under 12 inches. This helps users design gardens according to the best plants available in a season for a given area.

Input the date of the planting, and the program provides its maturity date. It functions as a planning calendar, gardening diary and notepad. Would-be floriculturists can spend hours engrossed in their computer garden, and never get their hands dirty!

More Music on the Mac

Music lovers can use the *Deluxe Music Construction Set* (Electronic Arts) to write their own ditties. It includes a bank of sample music to get neophytes started. To compose a song, enter notes using an on-screen piano keyboard, then modify the tempo and change the instrumentation. Cut and paste sections, repeat choruses, and rewrite themes until it sounds just right. Finally, add lyrics for a complete operetta or ballad, then print it all out sheetmusic style. The piano keyboard flashes as each note is entered or played, hhelping nonmusicians learn to pick out a tune on a real baby grand.

A Play on Words

Crossword Magic (Mindscape) allows the user to create crosswords, with the computer taking care of onerous matching-up details. Simply type in a word, place it on the grid where desired, then type another word. The computer automatically locates the spots where it fits, or if no space is available, holds the word in its memory and reintroduces it when an opening arises. The computer guides users through clue list preparation, making certain nothing is overlooked, then prints out the puzzle, the clue list, and even a completed crossword to use as an answer key.

In *Perplexx* (Hayden), the gamer competes against the computer to build words on a grid that intersect either horizontally or vertically with words already on the board. There are eight difficulty levels, and players can also custom design the point values for letter placement. *Perplexx* contains a 90,000 word dictionary, so it's a formidable opponent even for a skilled lexicographer.

No More Lost Puzzle Pieces — Ever!

Masterpieces (Hayden) transforms any *MacPaint* picture into an on-screen jigsaw puzzle. The program comes with a few sample paintings on disk to get puzzlers started. Jigsawers choose how many pieces the puzzle will have, from 9 to 196. Remarkably, the pieces are individually shaped with no two alike. Several skill levels make this suitable for all ages. While you could theoretically do the same thing with *MacPaint's* lasso, you'd have to be very careful to avoid overlapping images.

The Vanity Press

The Print Shop (Broderbund), newly translated for the Mac after other successful editions, turns the Mac into a private card and banner shop. Simply choose the type style, size and format, add pictures from the library of graphics contained on the disk, select border designs, and write your own message. It comes with a sampler of colored paper and envelopes to get the card shop started. The resulting creations are quite attractive.

Mac the Toymaker

Some hobbyist software actually helps manufacture toys. One unusual program for the Mac is *The Great International Paper Airplane Construction Kit* (Simon & Schuster). Based on the book of the same name, the kit contains a set of paper airplane templates and a library of graphics. Users start with the airplane designs on disk, which range from biplanes to space shuttles, or can design their own. In both cases, a library of graphics provides insignias, logos, rockets, windows, engines, pilots and even stewardesses to customize the finished planes. Perfect the plane of your dreams on screen, ornament it with graphics from the on-disk library, then print, fold and fly it. The planes



The Great International Paper Airplane Construction Kit. **Simon & Schuster**

generally fly farther, or at least in more interesting paths, than standard fold-your-own affairs.

Computer Analysis

The Luscher Profile (Mindscape) draws psychological profiles based on color preferences, to help you better understand yourself or your friends. In four different tests, users rank their color preferences from an enclosed color book, or choose shapes or shades of gray most appealing to them. The computer analyzes a person's choices and rejections of certain hues and shapes to reveal their basic nature, printing out a 1- to 2-page profile of that person's personality as the result.



The Luscher Profile. **Mindscape**

State-of-the-Art Adventures

Deja Vu (Mindscape) is a 1940's-style mystery designed expressly to take advantage of the Mac's graphic capabilities. Using the Mac windows the player can see several parts of the adventure simultaneously or even move objects from one window to another. Click on any of the on-screen pictures to see information about the object or its contents.

The story sets the player up as a murder suspect with amnesia. The object is to discover your real identity and solve the murder. But since your character has no memory, you can't even be certain if the crime happened recently or is a dimly remembered act from the past.

Bantam's *I, Damiano* (Bantam/Imagic) is an illustrated text adventure based on the "Damiano" science fiction/fantasy trilogy by R. A. MacAvoy. The player takes the part of

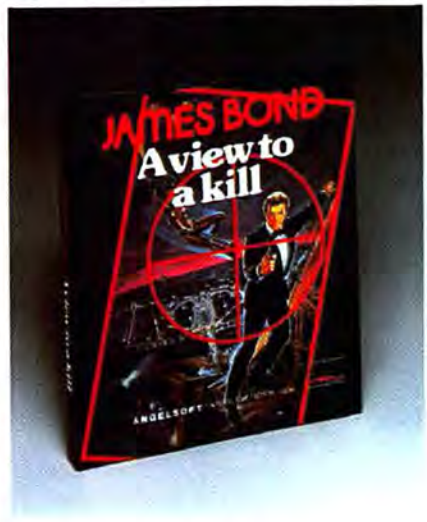


Deja Vu. **Mindscape**

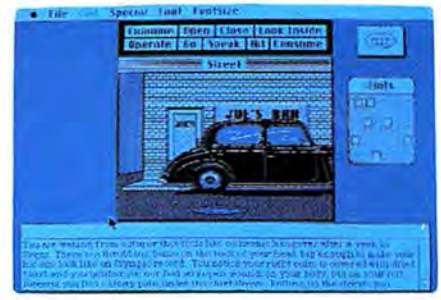
the wizard Damiano, then searches through a 14th century intrigue-ridden society for a powerful artifact. Pillaging armies, the plague and sorcery makes the quest hazardous. The cast of characters includes both Lucifer and the Archangel Raphael.

Sherlock Homes In "Another Bow" (Bantam/Imagic), another illustrated adventure, is an original mystery. The player becomes Holmes, then must solve six intertwined cases. The adventure takes place aboard a cruise ship, shortly after World War I, and uses an authentic ship plan as its setting. The cast of luminaries aboard includes Thomas Edison, Alexander Graham Bell, Picasso, Lady Astor, Louis Armstrong and Henry Ford. Players must interact with these stars in order to solve the crimes, and the computer takes the part of faithful Dr. Watson.

The latest James Bond flick inspired *A View to a Kill* (Mindscape). In this full-text game, Agent 007 must thwart a madman who's trying to destroy the high tech industries of Silicon Valley.



James Bond: A View to A Kill. **Mindscape**



Steven King's The Mist. **Mindscape**

This adventure boasts wandering characters that appear at various locations and have changing moods, so they react differently at each encounter.

Horror fans have a treat in store with Stephen King's *The Mist* (Mindscape) based on the novella of the same name from the book "Skeleton Crew." This text adventure is a nightmare-turned-real, set in a quiet New England town that's shrouded in a dense fog. It boasts many standard King ingredients, such as screams in the night that hint of things too horrible to contemplate.

For Adults Only

Text adventures leave a lot to the player's imagination. In contrast, *MacStrip* (Artworx) leaves little unrevealed. There are three poker opponents, two ladies and a gent, each with their own style of play. The software actually plays a credible game of five-card draw against the user, but the fun is in the wagering. You may lose your shirt against one of these good-looking card sharks, but you probably won't mind too much when the on-screen cuties lose a few hands and have to peel.

A Call to Arms

The Ancient Art Of War (Broderbund) contains eleven built-in historic war campaigns, complete with barbarians, archers and knights. The gamer chooses the troops and the terrain, then faces historically accurate opponents armed with their authentic battle weapons. An animated war map keeps the armchair general in control, and a zoom feature provides closeups of battles showing individual soldiers

A GALAXY OF NEW GAMES

EDUCATION ON THE MAC

Many Mac owners seem reluctant to let their youngsters use the computer. While this nervousness about the equipment will probably pass within the next year as parents realize that jelly-smeared fingers aren't necessarily a mouse's death warrant, it means that most educational software for the Macintosh is aimed at older users. This winter, Mac owners will be honing their talents, training their brains, perfecting skills and expanding their minds with a variety of programs meant to educate adults.

The First Lesson is Typing

Everyone needs to know how to type, and that's even more true for computer users. Fortunately, the computer teaches this skill superbly. The computer console provides the keyboard, and the microprocessor monitors the lessons so the typist is continually challenged to improve both speed and accuracy.

"New Improved" MasterType (Scarborough) turns typing practice into a high-speed game. The object of each drill is to defend a space ship against assaults by enemy words or letters. Typing them properly blasts them from the sky. After each game, there's a tally of the player-student's score, average speed and number of mistakes. There are eighteen skill levels and a special section to teach typists BASIC programming keywords.

Typing Tutor III (Simon & Schuster) measures students' typing and error rate, then adjusts lessons to suit individual ability. It displays improvements on bar charts that show how the typist did on each letter or symbol. The built-in game, "Letter Invaders," provides a break from the drills as letters zoom from space to be blasted by typing them. This high-speed entertainment makes typing practice almost fun!

Train Your Brain

Think Fast (BrainPower) is a unique approach to memory improvement. First it measures, then develops, short-term and long-term memory. By presenting users with varied memory tasks, it helps acquire stronger recognition and recall ability. Since the left half of the brain handles verbal and quantitative information, and the right side takes care of abstract visualizations, creative activities and intuition, the program contains specific tasks designed to enhance these separate areas. To improve the left side of the brain, users compare sets of letters and numbers, then try to recall them. Exercises for the right side of the brain require the user to study and recall graphic images. An on-screen clock times the tasks, and difficulty increases automatically as the user improves.

SAT Practice Makes (Almost) Perfect Scores

Although SAT scores aren't the only measuring rod used by college admission boards, even a small improvement can make a big difference in how a student ranks nationwide.

Score Improvement System for the SAT (Hayden) uses pretests to determine the student's areas of strength and weakness. Review modules provide tutorial help, as well as drills and analysis. Finally, two practice tests give the student experience with SAT-type questions and instructions, to determine exactly how the real test will go.

The review modules feature "tutormode," a special study-aid that gives a complete explanation of all the answers. The student can use tutormode with every question, or opt for explanations only on those answered incorrectly. The manual includes a study guide and schedule so serious students can follow a program of study and exercises in the months and weeks before the examination date.

The Perfect Score: Computer Preparation For the SAT (Mindscape) reviews all the verbal and math subjects included on the Scholastic Aptitude Test, then offers a timed, simulated SAT. It comes with a 150-page comprehensive manual and study guide, and is well-suited for self-paced learning.

in detailed animation as they carry out your commands.

The Accent's on Action

For old-fashioned arcade thrills, Bill Budge's *Pinball Construction Set* (Electronic Arts) offers a complete pinball palace on a disk. Players place bumpers, flippers and springs on the field, then modify gravity, change the speed of play, alter scoring methods, and even change the music and sound effects to create a personalized game. The customized pinball set can even be decorated to order by painting patterns on the field or even with paste-in pictures from any *MacPaint* file.

King's Quest II: Romancing The Throne (Sierra) is an animated, high-res graphic adventure. Players enter a fantasy world, and use the mouse to control an on-screen character who can walk, jump, even swim rivers. This hero must rescue the fair maiden in a quest that leads him through an enchanted kingdom filled with peril. The adventure is notable not only for its outstanding graphics, but also for a rich musical score. Multiple solutions keep the adventure fresh through many play sessions.

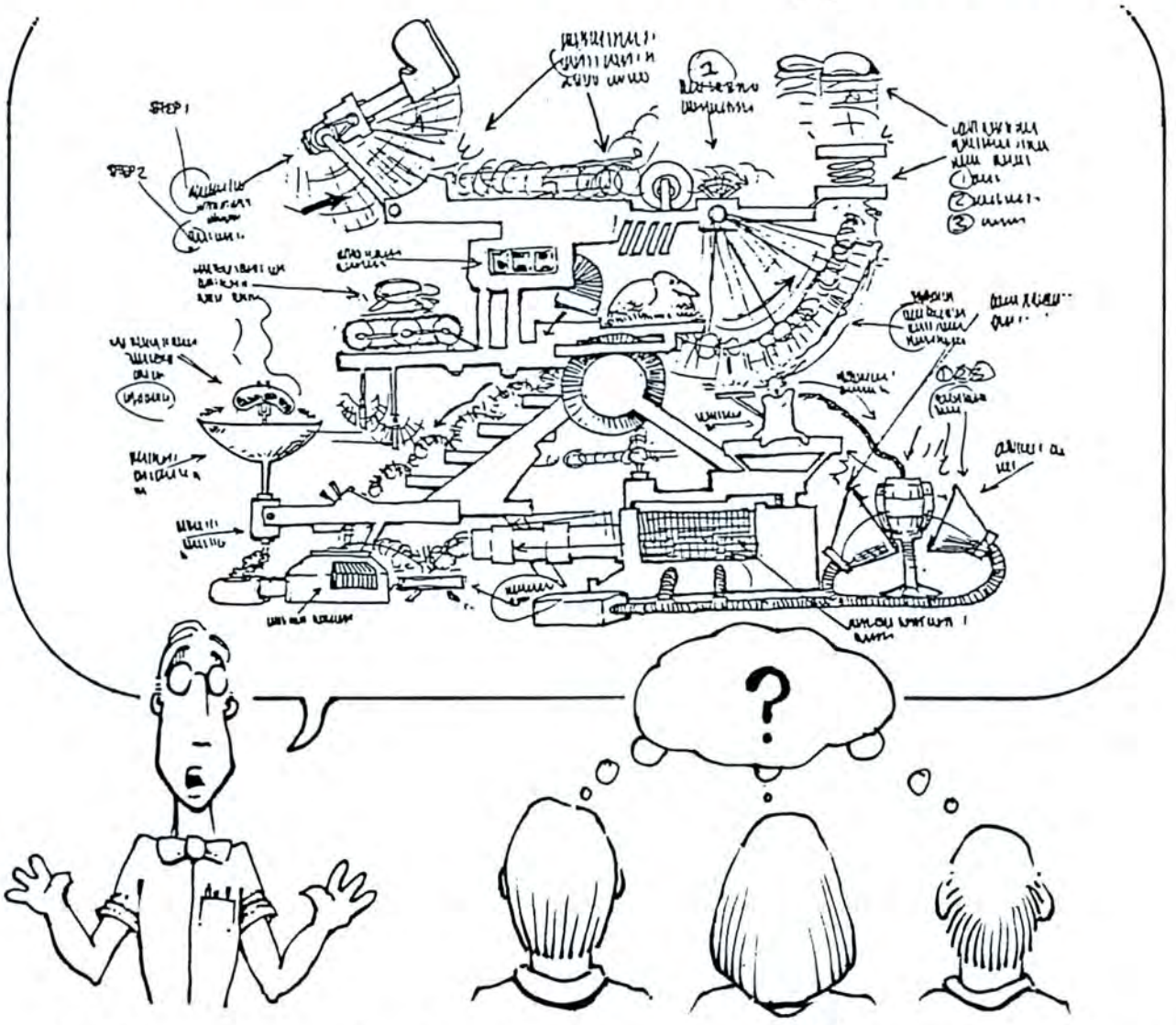
The Sporting Mac

In Sierra's *Championship Boxing*, players stage bouts between any of fifty world champions whose statistics are contained on disk, or even create their own pugilists. The graphics put players right in ringside seats, displaying the fighters battling it out in a side perspective. Refight historical matches, or promote battles between boxers who never met. This is your chance to finally learn once and for all if Joe Louis could actually flatten Muhammed Ali!

The Mac Universe Expands

No matter what your taste in entertainment, the Mac has something to offer. So, set aside the database, put away the word processor, forget about the spreadsheets and get down to some really serious fun!

Some ideas need more than words and pictures.



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by David Biedny

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Seeing Magic

VideoWorks is a full-screen animation program that allows users to integrate Mac graphics in complex and lengthy animation sequences. The program makes exceptional use of the Macintosh user interface. Select or modify an element in a window, and all windows that reference that element will change accordingly. The software package consists of three disks: a program disk, a movies disk full of excellent examples and an art disk packed with high-quality, ready made artwork.

The Users' Manual is exceptionally well organized. It begins with a complete tutorial section, and moves on to clear, concise explanations of the art of animation, *VideoWorks* style. An excellent reference section concludes the manual.

Magic Explained

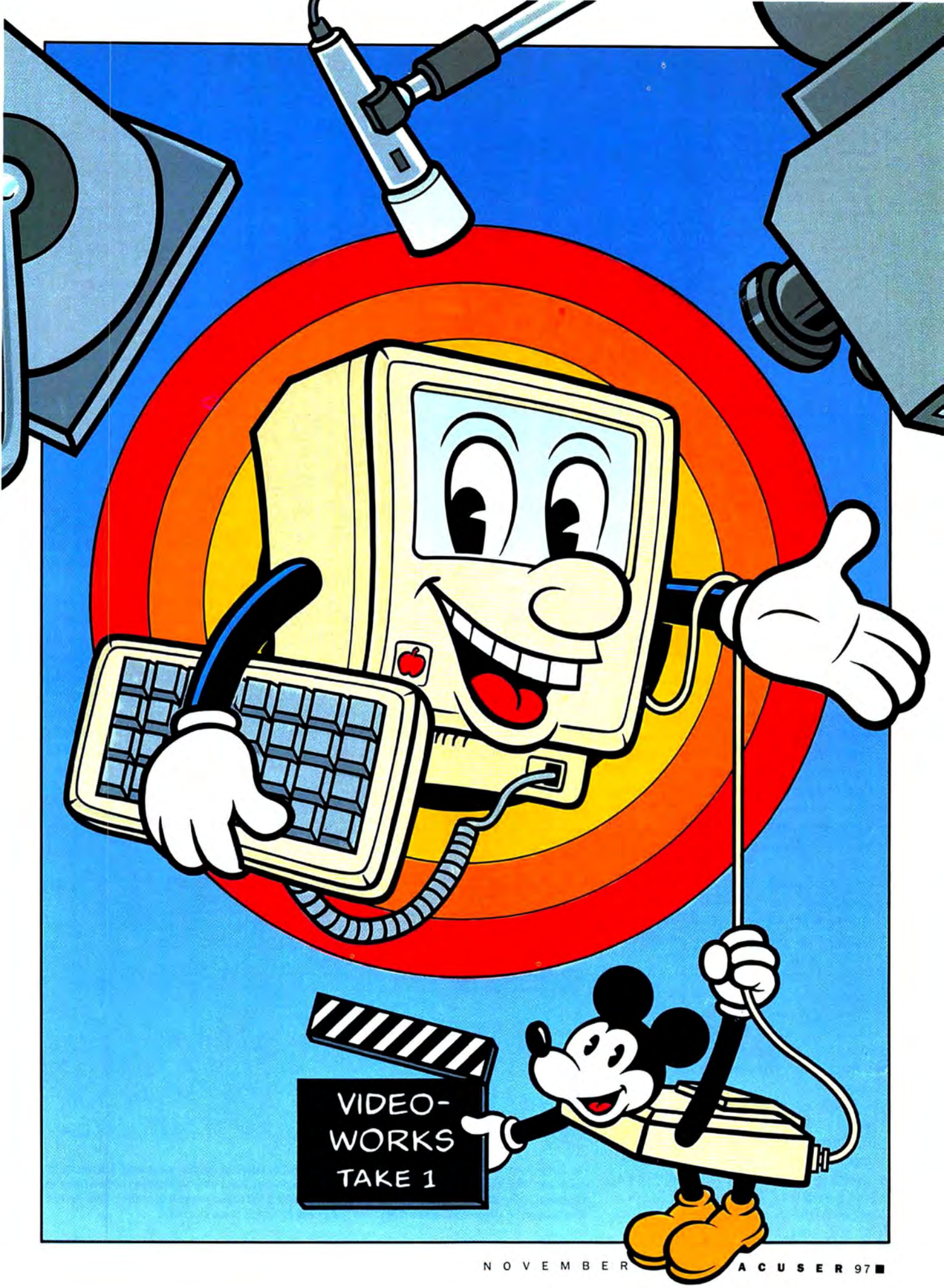
VideoWorks treats video very much the way a multi-track recorder works with sound. In multi-track audio, various channels, or layers, of sound are combined in order to produce a full, lush audio image. In a similar way, *VideoWorks* combines multiple layers of graphic images that are independent of one another to create the illusion of a complex series of events. These individual *channels* can contain either a single graphic element or a series of progressive elements called *sprites*.

Sprites are complex graphic objects that can be manipulated by the program as though they were a single point. In *VideoWorks*, any *MacPaint* image in a video channel is a sprite. The program doesn't have to worry about the graphic complexity, it merely controls the movement. The underlying sprite software takes care of the complexity, regenerating the entire image of a video channel as the animation sequence progresses. Without sprites there could be no fancy animated graphics. They are the core upon which animation sequences are constructed.

Creating Magic

The scene opens with the standard menu bar across the top, a control box in the upper right part of the screen

DAVID COULSON


VIDEO-
WORKS
TAKE 1

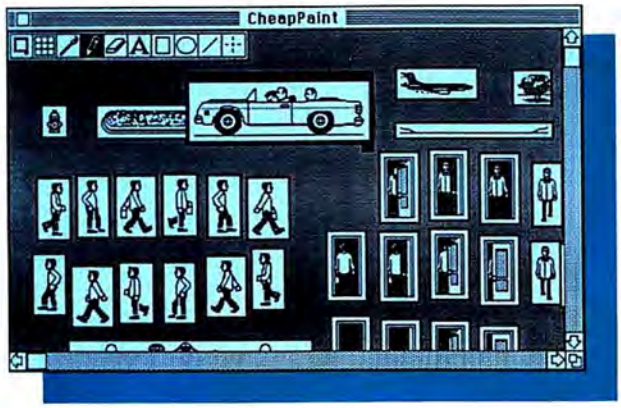


Fig. 1: The CheapPaint window contains all graphic elements; sprites modified in the CheapPaint window will be reflected in the animation sequence.

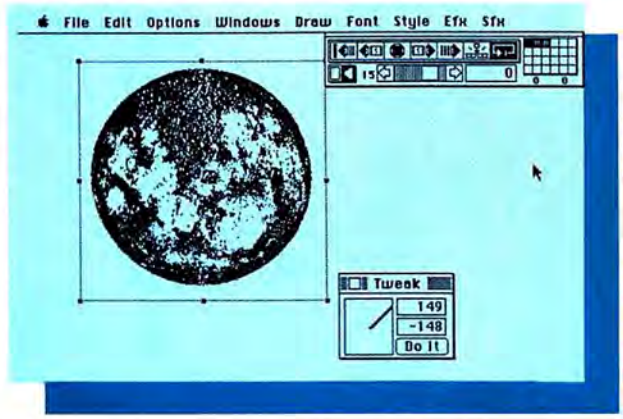


Fig. 2: Notice the position of the pointer relative to the Tweak window: it's 149 pixels on the X plane, and −148 pixels on the Y plane. If Do It is pressed, the moon will move in the indicated direction.

(the Panel), and a Cast window in the lower left part of the screen. The Panel box controls animation status, speed, frame insertions, screen background (black or white), and has a toggle switch to turn the sound on or off. The matrix on the right of the Panel shows some of the 24 video channels at your disposal; a darkened cell indicates that there is a sprite occupying that channel at that point.

CheapPaint is where the graphics are generated and modified. This feature sports a set of tools that should be familiar to *MacPaint*ers: paintbrush, eraser, pencil, text tool, box, circle, line and marquee (or selection) box.

Easels to build sprites in are created by simply clicking the Easel icon. Pasting graphics into Cast cells also automatically generates an easel in CheapPaint containing the graphic object.

Many of *MacPaint*'s shortcuts also apply to CheapPaint: Shift-Command-clicking on any area in an easel will take you into FatBits mode; pressing the Option key while using the pencil tool will transform the pencil into the Scroll Hand, so that the screen can be scrolled while remaining in FatBits.

Graphics can be imported into *VideoWorks* via the Scrapbook or through a handy desk accessory called "Art Grabber" that comes installed on the *VideoWorks* program disk. This desk accessory allows users to open any *MacPaint* document from within *VideoWorks*, move around on it until a useful segment is found, and copy the selection using a standard marquee box. "Art Grabber" also has a ShowPage function that works exactly like *MacPaint's* ShowPage.

Making Movies

VideoWorks allows users to animate objects in two different ways. For those wishing immediate gratification, the program follows mouse movements and generates real-time animation. Simply grab any element in a Cast window, drag it onto the screen, and push the Play button on the control panel. Drag the element around on the screen; *VideoWorks* will record all movements in real time, and then play back the same exact sequence.

More precise control over the movement of an object on the screen can be achieved by constructing sequences frame by frame. The Tweak window permits moving an object or sprite pixel by pixel, in both horizontal and vertical directions. The control window displays, in pixels, the X and Y screen positions where the selected object will

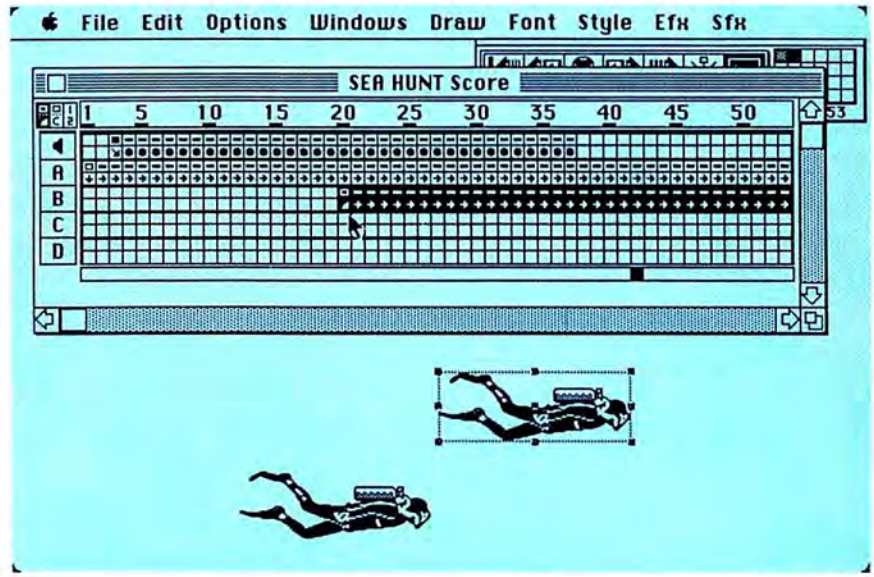


Fig. 3: The diver on the left is in channel A in the Score window; by selecting and copying channel A, a new sprite can be created in channel B. While it is the same object, it can be placed in a different location and time frame on the screen. In the above sequence, the selected diver in channel B will appear where it currently is after the first diver appears, in effect creating two divers. The soundtrack channel is above channel A.



Fig. 4: Top: Matte effects. Bottom: Transparency effects.

move to when the Do It button is pressed. Tweak control is not limited to the size of the Tweak window, so that even if the control line is pulled outside of the Tweak window, the displacement will still be registered.

Editing Movies

Any animation that is created, be it real time or frame by frame, will register in the Score window. Each row in the Score window corresponds to a discrete video channel.

The Score window provides three pieces of information for each video channel: the status and direction of movement of the sprite in that channel, the video effect assigned to that sprite, and its position in the cast window.

The top channel is the soundtrack channel. Highlighting an area in the soundtrack and selecting a sound from the sound effects (Sfx) menu will cause that sound to be inserted into the frames selected.

One of the more powerful features of *VideoWorks* is its ability to select a sequence in one *video* channel and copy it to another channel, while modifying the screen position and time framing of the copied sprite. One of the tutorial demos features a family of frogs jumping across a road. Only one frog was created; it was just cloned in the Score window and pasted into different areas on the screen.

Special Effects

VideoWorks offers a vast selection of special visual and audio effects. The special effects (Efx) menu gives users the power to do everything from adding various levels of transparency to creating matting effects between two or more sprites. The program can also differentiate between 24 levels of foreground and background. The

The Future Looks Good

VideoWorks is not a static product. Planned improvements will make this program even more useful and powerful. MacroMind, the program's creator (the publisher is Hayden), hopes to market the source code of the program to developers interested in creating software containing high-quality animation, so don't be surprised to soon see games that will rattle your eyeballs. A utility that will allow users to compose single-voice music in *MusicWorks*, another Hayden product written by MacroMind, and move it into *VideoWorks* should be available soon. The music will appear in the Score window in the sound effects track, (under the *User Defined* menu selection) like other sound effects.

A print utility will ease the impact of one of the major failings of the current *VideoWorks*, its inability to print. This program will allow users to print out individual frames or entire storyboards (reduced printouts, similiar to Print Catalog in *MacPaint*). Currently, the only way to get hard copy is to generate a screen dump to disk, and then print out the resulting *MacPaint* document.

Last, but not least, there is a *Jukebox* program for *VideoWorks*, already released into the public domain by MacroMind. The *Jukebox* can play back *VideoWorks* movies, complete with sound, without actually having the *VideoWorks* program on the same disk.

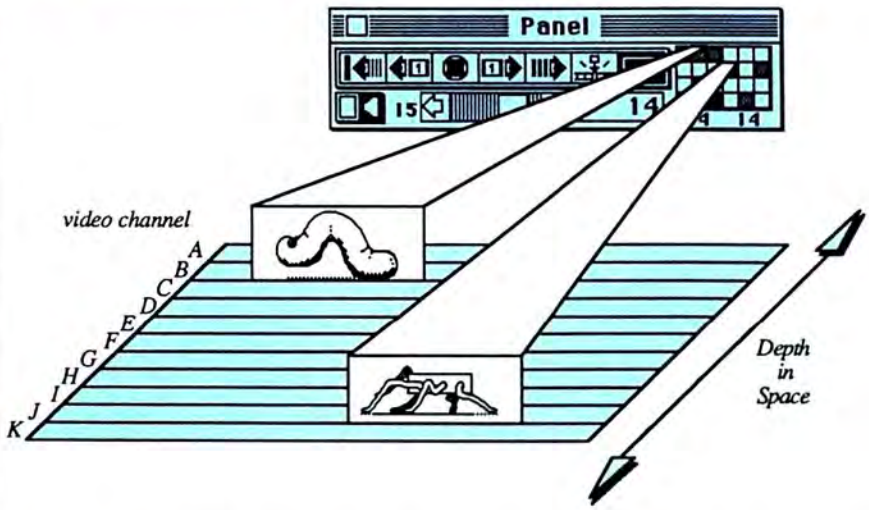


Fig. 5: *VideoWorks* can work with 24 levels of depth; each sprite is assigned a relative depth, depending on which channel it occupies. Channel A is in the background; channel X is in the foreground. If the bug and worm occupy the same screen location at the same time, the bug will appear to pass in front of the worm.

lower *video* channels correspond to the background of the screen while the highest channels place an object in the foreground.

There is also an ample selection of sound effects. From machine sounds to three different types of explosions to musical passages, over 81 sounds are available. The inclusion of sound does not slow down animation appreciably.

The menu structure of the Sfx menu is a Mac first. When a sound category is selected the main Sfx menu is replaced by a submenu in the menu bar. In this way all 81 sounds fit into a small area and are still easy to select.

Creative Applications

VideoWorks is more than just a program to play with; there are some very interesting and practical uses for the program. For example, in the field of video production, *VideoWorks* can pay for itself overnight.

One of the nicest features of the Mac is the availability of a multitude of distinctive fonts. Combine these with *VideoWorks* to turn the Mac into a very effective and flexible title generating machine.

Text can move across the screen vertically and horizontally at any speed. By taking advantage of the special graphics provided, titles can flow through one another, interweave, and even merge with each other. Text can leap out of the background, or gradually zoom out of a blank screen. And none of that is hard to create. These capabilities were previously achievable only on costly, dedicated hardware; the Mac now brings this power to virtually anyone.

VideoWorks can also be used to create powerful business presentations. Included in the demos on the movies disk are sequences featuring flying pie charts, growing bar charts (with digitized food products in the background) and a wonderful musical three-dimensional chart. Animation can be a major tool in pitching that BIG contract; and creating presentations with *VideoWorks* is so easy that any business user can do it.

Wrap

VideoWorks is one of the best Macintosh programs on the market. It will appeal to many people, from the corporate user to the to the frustrated would-be animator who who can't handle the advanced mathematics required to create this level of animation on most other machines. This is a fairly complex program, but it possesses an intuitiveness beyond that of most Macintosh software, utilizing the Mac user interface to its fullest. And at a price of less than $100 (list!) it is one of the best buys in the market.



Fig. 6: Submenu (right) lets users explore sounds from the main sound menu (left) in depth. Select Top to move back to main sound menu, or Next to move to the next sound menu in the sequence.

VIDEOWORKS: REPORT CARD

Follows Mac Interface:	*****
Printed Documentation:	****
On-Screen Help:	**
Performance:	*****
Support:	***
Consumer Value:	*****

Comments: Breaks new ground, superb animated graphics tool.

Best Feature: Ease of use due to integration of program elements.
Worst Feature: Lack of ability to produce hard copy records.
List price: $99.95. Requires 128K. Second drive recommended. Published by Hayden Software Company, Inc., 600 Suffolk Street, Lowell, MA 01854. (1-800) 343-1218.



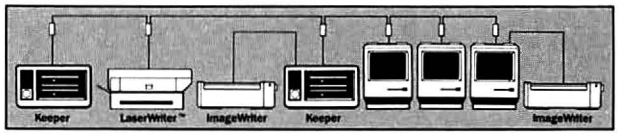
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Typical network setup using two Keepers

Brains and Brawn.

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THEY SHOOT UTILITIES DON'T THEY?

Well, not really, But this cost-effective collection of programs makes your Mac even more useful.

by Steven Bobker

"THE BEST $40 I'VE SPENT ON my Mac."

That's what a lot of happy owners of *Quick & Dirty Utilities* are saying these days. This disk, the first in a promised series, contains seven applications and nine desk accessories, all utility programs. The programs range from good to great. There are several items here (*Catalog Keeper, Font Manager, Time, Q&D Filer*) that will make you ask: "How did I get along before without this?"

The applications are *Catalog Keeper, DA* (for Desk Accessory) *Finder, DA Installer, Font Manager, Launcher, Switch* and *Reboot*. The desk accessories are FileInfo, Mouse Position, Q&D Dialer, Q&D Filer, Q&D Terminal, Q&D Xmodem, Screenocker, Super Note Pad and Time.

Applications

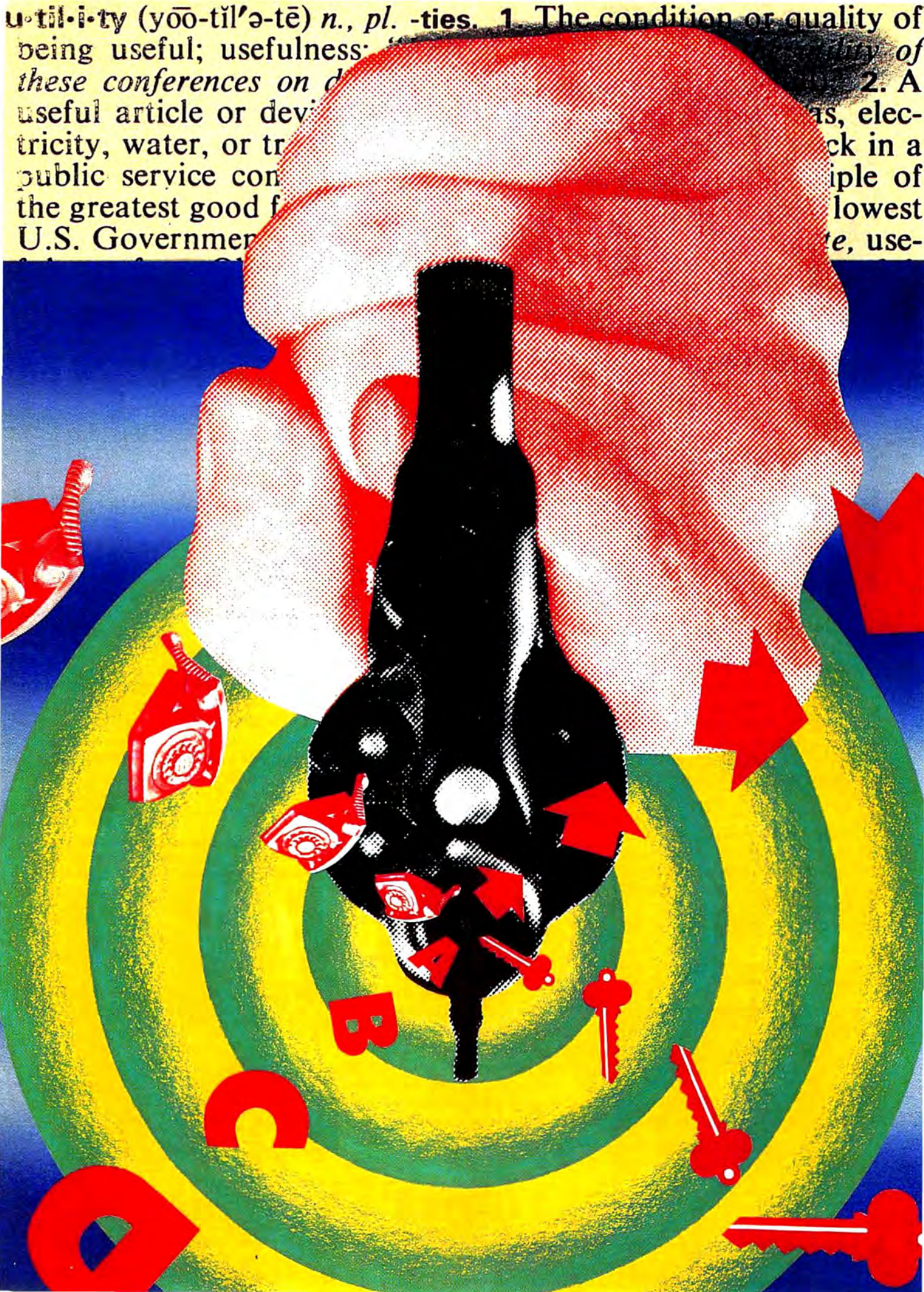
Catalog Keeper is the gem of this disk. It is the easiest to use, most versatile, most forgiving cataloguing program you can use on your Mac. Users can create catalogs with up to 2400 files listed in each, and simply exclude all the files such as DeskTop that appear on every disk.

Sorting by name is automatic; sorts by size, type, creator, date last modified, or volume name are also possible. Both on-screen reports and printed reports are easily formatted, with control of the font, type size, and title header information. Headers and footers can automatically pick up the current date. Reports print well on both ImageWriter and LaserWriter. The cataloguing process is very fast—using an external disk drive you can catalog 30 disks in 5 minutes.

DA Finder has two purposes. The first is to automatically open up to four desk accessories at once, and the second is to more efficiently manage memory on a 128K Mac so that more (or larger) desk accessories can be opened without running out of memory.

DA Installer lets users save, load, delete, rename and get information

GENE GREIF


u·til·i·ty (yōō-tĭl′ə-tē) n., pl. -ties. 1. The condition or quality of
being useful; usefulness:
these conferences on
2. A
useful article or dev
as, elec-
tricity, water, or tr
ck in a
public service con
iple of
the greatest good f
lowest
U.S. Governmen
te, use-
A
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C

THEY SHOOT UTILITIES, DON'T THEY?



Fig 1:*Q&D Dialer* allows users to create a phone number directory and then make calls by selecting names and clicking on the controls at the bottom.

about the desk accessories in the System file. The desk accessories must be in the form of resource files.

Font Manager is a tool that is quicker and more versatile than Apple's *Font/DA Mover* for working with fonts. It does all the expected font manipulations and then some. Font numbers are shown and, if necessary, can be changed. The details and mechanics of font numbers and font number assigning are well covered in the manual.

When a font in the selection window is selected, the whole font is displayed in its actual size at the bottom of the application window. As many fonts can be displayed as can be selected (and that's all that are in the System).

Users can create and merge font files. Although these files are unfortunately not compatible with standard Apple font files, *Font Manager* can read both *Font Mover* and *Font/DA Mover* files. Fonts can also be bound directly into applications — a technique of use to more advanced users.

Launcher is a small application that allows the user to select a document—for example, a basic *MacWrite* memo blank. Then whenever that disk is booted that application will automatically appear, ready to work on. This is an extension of the Finder's ability to set a start-up application. A particularly good use for this program is to select a *Switcher* document as the autostart document. You will then go directly into a fully loaded and ready *Switcher*. This application is both simple to use and error-free.

Switch is a tiny application that, when run, makes the disk that the application is on the start-up disk. This program works well but is not really necessary, as launching (double-clicking) a disk's Finder while holding down the Option and Command keys accomplishes the same thing.

Reboot is another small application that simply ejects whatever disks are in the drives and soft reboots the Mac. This program closes open files before ejecting the disks to avoid the danger of corrupting files or programs. *Reboot* does not work on a Mac XL and should not be used with a hard disk.

Desk Accessories

The nine desk accessories are as varied and versatile as the applications. Let's look at each one in turn.

FileInfo lets the user examine a file's type, creator and finder and directory attributes. The type and creator tell the Finder what kind of file it is dealing with (application or document), which icon to use, and if it is a document, which application it belongs to.

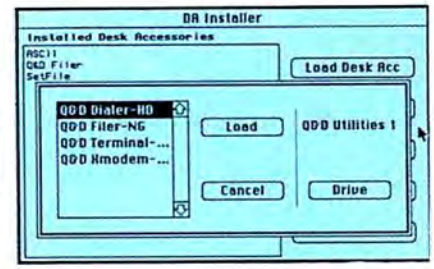


Fig. 2:*DA Installer* manipulates the desk accessories in the System file. DAs can be added, removed and saved.

The directory attributes let users make a file visible or invisible, locked or unlocked, and protected or unprotected, as well as modify other useful attributes. Users can easily change any of the data that appears in the on-screen box.

The ins and outs of types and creators are covered in the manual, along with a brief explanation of of the meanings of most of the finder and directory attributes (not all have been documented by Apple).

Mouse Position simply displays the current position of the cursor in the upper right corner of the screen. While this data is primarily useful for

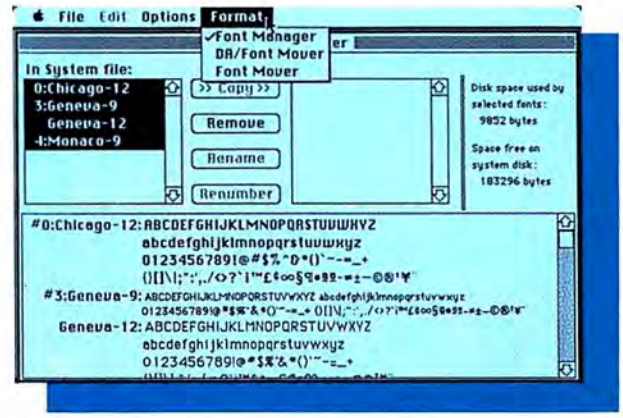


Fig. 3: A *Catalog Keeper* catalog of the files on the *Quick & Dirty Utilities* disk. This file is sorted alphabetically by file name. The menu shows the other options. The Exclude List is a user-created set of filenames that are not to appear in the catalog.



Fig. 4: *Font Manager* can read font files in any of three formats. Selecting fonts causes the size of the fonts (in bytes of memory occupied) to appear at the right and the sample text in the actual size below. In this case the sample text is simply a listing of all the characters in the font.

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Screen Shot of Actual Size Page with Grabber Hand

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THEY SHOOT UTILITIES, DON'T THEY?

programmers, other users can use the coordinates to rather precisely measure lines in *MacPaint* or *MacDraw*.

Q&D Dialer is a combination of 20-number directory and telephone dialer. It can also set the terminal configuration for the Q&D Terminal. Each directory entry can also contain a string of text and a set of terminal settings. Use is simplicity itself. A special version that uses the printer port for the modem is included for hard disk users.

Q&D Terminal is a simple 24-line by 80-character TTY or dumb terminal emulator. Its major advantage is that it is a desk accessory and so can be run while an application is running. Users can send and receive ASCII files, paste from the clipboard, and send ASCII characters from the keyboard. Q&D Terminal can communicate at 300, 1200 or 2400 baud. A special version that uses the printer port rather than the modem port is also provided.

Q&D Terminal also comes in an enhanced version for 512K Macs. This version does everything Q&D Terminal does (usually a bit better), has DEC VT52 emulation and built-in Xmodem and dialing support. And it supports, as do all Dreams of the Phoenix telecommunications products, the MacBinary standard. A printer port version is included.

Q&D Xmodem is an accessory to an accessory. When telecommunicating, this accessory sends and receives files using the Xmodem error-correcting protocol. It must be used with Q&D Terminal, and a printer port version is included.

ScreenLocker is a desk accesory that lets users leave their Macs with the assurance that the Macs can not be disturbed (other than by turning them off). When this DA is selected it requests a password; it will not release the system or allow any operations at all until the password is typed again.

Super Note Pad is for all of us who have outgrown the Apple Note Pad desk accessory. This expanded version has up to 20 pages of 800 characters (the original had only 8 smaller page of 256 characters), a quick reference (index) page, bidirectional paging and search for selected text. All of the normal text editing options (cut, copy and paste) are supported.

Time is a tiny desk accessory that puts the current time (in 24-hour or military notation) at the top right side of the menu bar. Once Time is installed it will survive applications opening and closing and even disk swapping. Unless it is turned off (by selecting it again on the Apple menu) the only way to make it go away is to reboot.

Q&D Filer is, like the Mac desktop, a file manipulator par excellence. And since it's a desk accessory it is almost always available. Some of its functions are not available from the desktop but that's the one place place where it isn't needed since the desktop is where all the things Q&D Filer does are normally done. Q&D Filer allows users to GoTo any application; Print any text file; GetInfo on, Delete, Copy or Rename any file and find the space Available on all mounted disks. Most time-consuming trips to the desktop can be avoided by installing this DA on all your system disks.

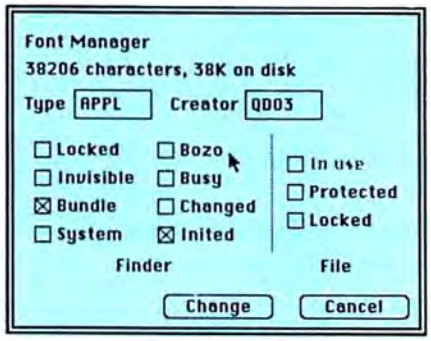


Fig. 5: *FileInfo* window showing the file data for *Font Manager*. The type, creator, finder attributes and file attributes can all be changed. Be sure you know what you are doing before doing so!

QUICK AND DIRTY UTILITIES, VOLUME 1: REPORT CARD

Follows Mac Interface:	****
Printed Documentation:	****
On-Screen Help:	**
Performance:	****
Support:	*****
Consumer Value:	*****

Comments: A really loaded package. You may never use some of the components, but there is plenty here for everyone. Utilities that will make you wonder how you did without them.
Best Feature: There so much here that everyone will have their own favorite. In my case *Catalog Keeper* has allowed me to find everything in my disk collection, an enormous boon.
Worst Feature: Too much to use at once.

List Price: $39.95. Most is usable on a 128K Mac, exceptions are clearly noted. Second drive and printer recommended.
Published by Dreams of the Phoenix, Inc., PO Box 10273, Jacksonville, FL32247. (904) 396-6952.

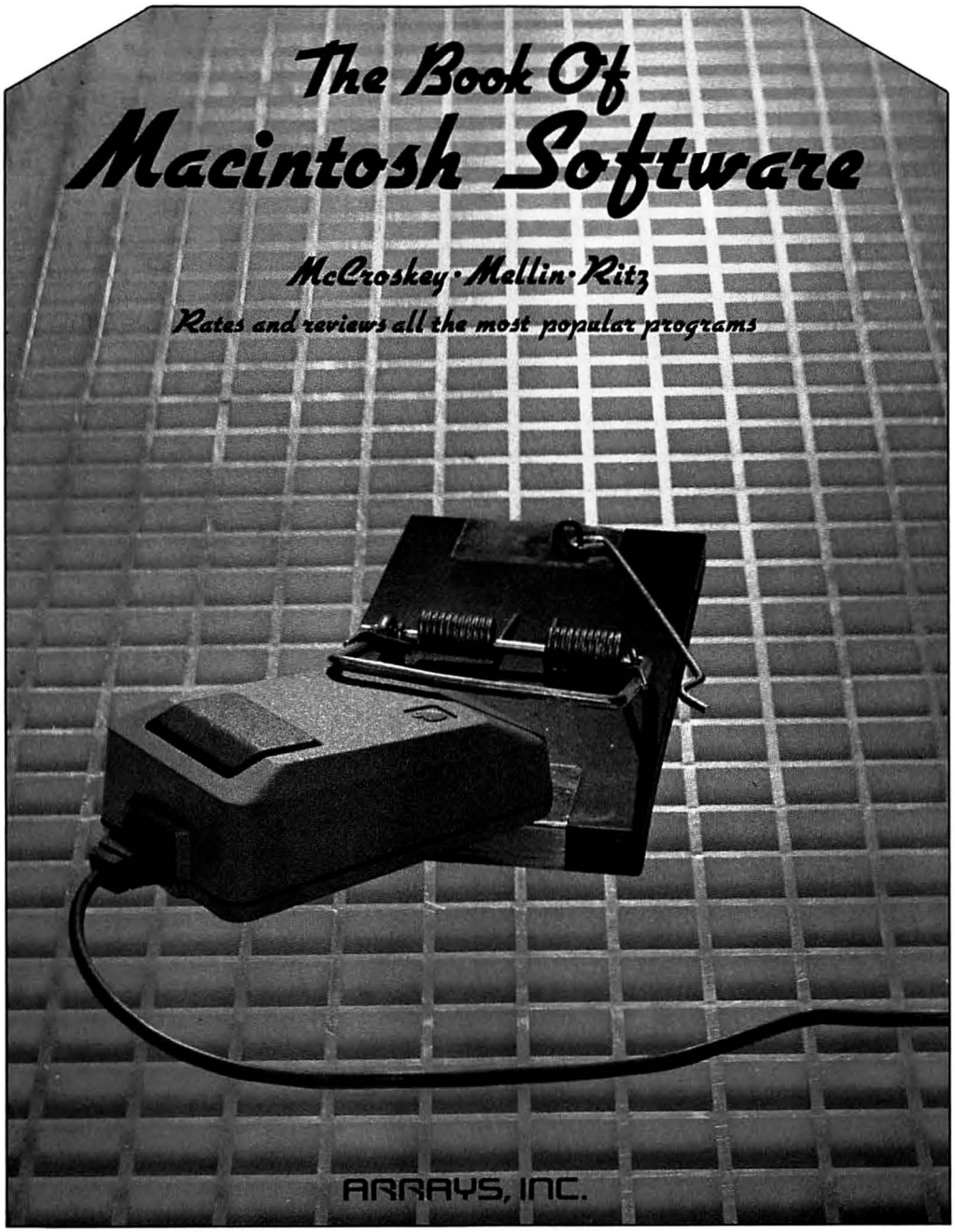
Adding It Up

The publisher offers to pay a bounty of $5 for each verifiable bug that users reported. As of press time, fewer than ten people have claimed their $5! That's impressive, considering the number of copies sold and the number of files on the disk.

Don't worry about upgrades either. When an upgrade is announced (by mail to all who send in their registration cards) simply return the master (no problem there, it's not copy protected) with either $2 to cover mailing and handling costs or $5 to get both the upgrade and a new manual. Either way the upgrade comes back quickly.

Volume Two has been announced and should be available in September. It will include an editor in desk accessory form (Q&D Editor) and a version of BASIC in DA form (really!) That's not going to be MS BASIC 2.0, but it will be able to run a lot of simple programs that don't use the Mac interface. This will be great for those with a large collection of old BASIC programs. Among the applications will be 512 Copier, a program that will copy and verify any nonprotected disk, just the tool for the small-scale software publisher. The disk will be filled with many other useful tools.

Dreams of the Phoenix's basic philosophy is to produce products that customers find are worth the money paid for them. In *Quick&Dirty Utilities, Volume One* they have exceeded their goals, to their customers' benefit. For a lot of value for your software buck, this is the product.



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BASIC: A DIP INTO THE ROM

Microsoft BASIC has two levels: the obvious and . . . In this first article in a series, we get our feet wet in the ROM waters.

MICROSOFT BASIC IS BOTH A VERY powerful and familiar language. The latest versions (2.0 and up) allow programmers to access the ROM functions that make the Mac so unique.

In a group of articles we'll guide you on those first tentative steps beyond the safety of "normal" BASIC programming. We'll start with the familiar "Save/Save As" and "Open" dialogs.

While it is easy to create dialog boxes from scratch in BASIC programs, it's even easier to tap into the Mac's system dialog boxes when you want the user to be able to save files or open existing ones. The two forms of the FILES$ function access the "Save/Save As" and "Open" boxes and allow creation of a routine to mimic the desktop's folder-document arrangement.

by Sharon Zardetto Aker

GEOFF SPEAR


AS#1
"ENVL"
GOSUB
FILE$(0
slice$,1
RIGHT$

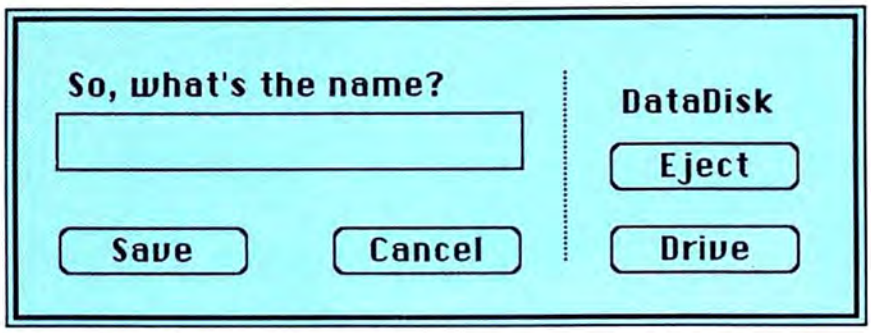


Fig. 1: The FILES$(0) function accesses the Mac's "Save" box; use any string you want to prompt the user to name a file.

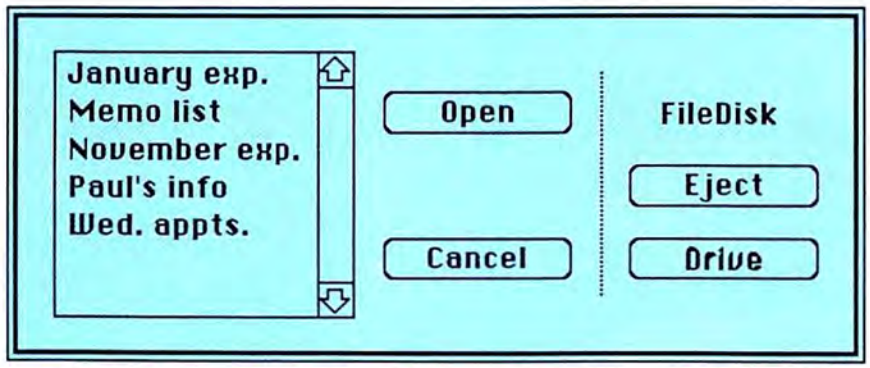


Fig. 2: The FILES$(1) function calls up the "Open" box. Control which files appear in the window by specifying a type of file to be listed.

The Save Box

The FILES$(0) function puts the "Save" box on the screen. The Save, Cancel, Eject and Drive (if an external drive is attached) buttons appear in the box, and are fully functional, with no further programming effort. A prompt can be added to the dialog box—either the standard "Save File As . . . " or something specifically tailored to your application.

The syntax of the first FILES$ function is:

```
a$ = FILES$ (0,prompt)
```

where prompt is any text string up to 25 characters long.

As soon as the Save button or Return is pressed, the file name that the user has typed is appended to the name of the disk shown in the dialog box, and the combined name is stored in a$, like this:

Diskname:Filename

Since this is the syntax needed to save files to a disk other than the default disk, it makes file management simple: the same "save" routine works no matter where the file is being saved to.

A basic routine that uses the Save box to name the data file to be saved looks like this:

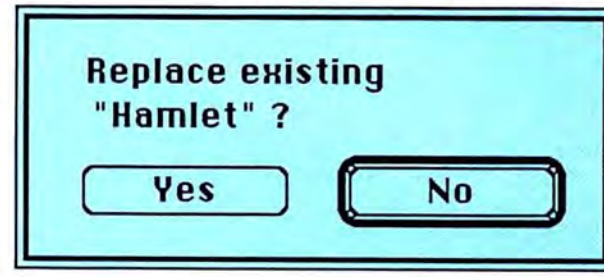
```
a$ = FILES$(0,"Name this file")
OPEN a$ FOR OUTPUT AS #1
PRINT#1, [information in
    program]
CLOSE#1
```

In actual practice, there will often be a FOR-NEXT loop between the OPEN and CLOSE statements, perhaps reading information from an array into the datafile.

If the Cancel button in the dialog box is pressed, the string variable is an empty string. Allow for that possibility with code like:

```
a$ = FILES$(0,"Name this file")
IF a$ = "" THEN GOSUB
    cancel.routine
OPEN a$ FOR OUTPUT AS #1
PRINT#1, [information in
    program]
CLOSE#1
```

Fig. 3. A hidden benefit of the FILES$ function is that this "safety" box appears automatically if the name of an already existing file is duplicated.



The Open Box

The second FILES$ function puts the "Open" box on the screen. The syntax b$ = FILES$(1) is all that is needed to access the Open box. Again, the Cancel, Drive and Eject buttons are functional with no further programming, and so is the scrolling window in which the file names appear. The name of the selected file is stored in the string variable, prefixed with the appropriate disk name; an empty string is returned if the Cancel button is used.

A basic "Open" routine looks like:

```
b$ = FILES$(1)
IF b$ = "" THEN GOSUB
    choose.action
OPEN b$ FOR INPUT AS #1
INPUT #1, [information in
    program]
CLOSE#1
```

Filetypes

One of the problems with the basic FILES$(1) function is that so many disk files show in the window: any BASIC program saved in text format, any BASIC program created in the current version (decimal or binary) of BASIC, all datafiles (random and sequential) created by BASIC, and any text files on the disk. Cut down on the number of files that must be scrolled through by creating a "filter." The technique is to define a file type in BASIC, and select only files of a certain type to appear in the Open window.

In fact, an "envelope" system that lets the user store files in a specific envelope is simple to construct. A list of envelopes can be shown in the Open

LISTING 1

```
create.newenvelope
OPEN "New" FOR OUTPUT AS
  #1:CLOSE #1
NAME "New" AS "New", "ENVL"

savebox:
  filename$ = FILES$(0, "Name
    this file")
openbox:
  envelope$ = FILES$ (1,"ENVL")
  IF RIGHT$(envelope$,3) = 'New"
    THEN GOSUB name.envelope
OPEN filename$ FOR OUTPUT AS #1
  REM (Send your datafile info here)
CLOSE #1
NAME filename$ AS
  filename$,type$
STOP

name.envelope:
  envelope$ = FILES$(0,"Envelope
    ID? (4 characters)")
  check.name.length:
    slice$ = RIGHT$(envelope$,5)
    IF LEFT$(slice$,1) = < > ":"
GOTO name.envelope
  type:
    type$ = RIGHT$(slice$,4)
  make.envelope:
  OPEN envelope$ FOR OUTPUT AS
    #1:CLOSE #1
  NAME envelope$ AS
envelope$,"ENVL"
RETURN
```

LISTING 2

```
choose.envelope:
  envelope$ = FILES$(1,"ENVL")
type$ = RIGHT$(envelope$,4)
choose.file:
  filename$ = FILES$(1,type$)
  IF filename$ = "" GOTO
    envelope.choice
OPEN filename = $ FOR INPUT AS #1
  REM (Retrieve file info here)
CLOSE#1
```

window, and then another Open box can show the files in the selected envelope. (This is analogous to the desktop folder system, although it does not affect the desktop at all.)

A file type is specified with the FILES$(1) function by using the type's four-character label:

FILES$(1,"APPL")

which shows only *applications* in the Open window, while

FILES$(1,"TEXT")

shows only text files. You can string file types together, so FILES$ (1, "APPLTEXT") shows both applications and text files in the window.

The NAME AS command not only allows renaming disk files, but also lets a type be specified. The syntax looks like:

NAME *originalname* AS *newname,type*

By "typing" files as soon as they are saved, programmers can later call up categories of files to appear in an Open window.

The Envelope Routine

The program in Listing 1 is the routine that lets a user save a file to a specific envelope.

The empty file named "New" serves as an original envelope name; when it is selected, the program branches to a subroutine that lets users name a new envelope. Use NAME AS to type this file as "ENVL". Use a Save box to name the datafile and an Open box to let the user scroll through envelope names.

If the "New" envelope is picked, branch to the "new.envelope" subroutine. Since the selected name is added to the disk name, it is only necessary to look at the last three characters of the string to see if "New" was chosen.

In the "name.envelope" subroutine a Save box is used to let the user name a new envelope. The routine checks to be sure the file name is only four characters long. It slices the string to get past the disk name using a routine that checks to see if a colon is the fifth character from the right, which would mean the file name is four characters. The string is sliced again to get the last four characters for the type identification.

Finally the empty file is saved as a file of type ENVL.

Back in the main program, save the original file, then use NAME AS to type it according the envelope it belongs in.

This rather complex-looking routine works as it stands, although it saves only empty data files to the disk. When you use it in your own programs, insert the lines needed to have the correct information stored in the data files. ("Envelopes" are always empty; they serve as type-identifiers only.) Also add a "trap" in case the Cancel button is pushed.

A bonus in using the system dialog boxes for saving files is that the "Replace existing [file]?" dialog box automatically comes up when a duplicate name is used.

Selecting From Envelopes

Listing 2 shows how envelopes can be "opened."

Use the Open box to list all files of type "ENVL". Then use the selected envelope as the type definition for the next Open box, and slice the last four characters from the file name to get rid of the disk name.

If the Cancel button is used in the second Open box, return the user to the envelope selection. Open the file.

Remember to add a line that allows for the possiblity that the user pressed the Cancel button in the first Open box; what will happen in that case depends on the program in which this routine is used. And the user's data disk will probably have the "New" file on it that was created when the "Place in an Envelope" routine was last used; you must either allow for that potential problem within this routine—don't let it be selected for opening or use the KILL command to erase it from the disk at the end of the other routine.

That wasn't hard at all, was it? Next month look for a peek at QuickDraw and patterns.

SOME BASIC FILETYPES

Files that are created by BASIC can have any one of a number of filetypes. Datafiles default to type TEXT, as do all BASIC programs saved in text format.

The other types of files created from BASIC are:

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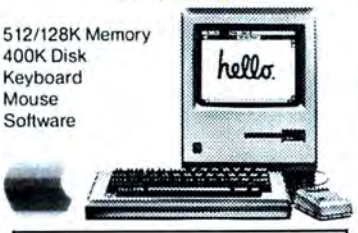
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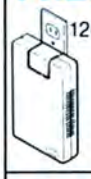


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DELIVERING A FAT

MacUser plays midwife to a 512K upgrade

THERE'S A LITTLE BIT OF THE DO-IT-your-selfer in all of us. When it comes to working around the house, or on the family car, decorating a cake or doing the landscaping, many of us tend to be adventurous. But some of the same people who don't think twice about tackling other jobs that call for a "specialist" will blanch at the suggestion of popping open their Macs and installing their own memory upgrade.

Now, we're not talking here about the whole "hacker" routine. This article isn't full of tips on how to shop for chips in surplus electronic stores or the ins and outs of the Mac's 68000 address lines. Rather, there are a number of kits on the market that are advertised to everyday Macintosh owners as a means to save a bit of money when fattening a computer. Home owners have heard the term "sweat equity" to describe how building a new room can increase the value of a home — these new kits offer a form of "solder equity" to the rest of us.

How hard are such kits to install? We took a look at one from Micro Conversions Inc. as being representative of the field. Turns out that it's not as difficult as many people might think, although it certainly shouldn't be one's first project with a soldering iron.

While the pictures tell the story in a step-by-step manner we'd like to add a few of our own observations too.

First off, we were surprised at just how much was packaged in the Micro-C kit. We expected 16 256K RAM chips, and the spare seventeenth one was our first confidence-builder. The sockets included in the set made us feel that we were not only upgrading our Mac's memory but that we were also adding to its overall design. Those plug-in sockets will make the next memory upgrade (and



BY NEIL SHAPIRO AND RICHARD HERBST

MAC

you *know* memory is getting bigger and cheaper) far easier. The small parts; the resistor and capacitor, multiplexer chip and board were all there too.

And ah, the array of tools! What a welcome addition. A special little pry bar and hex wrench would make it simple to open the Mac's aptly-named clamshell case, cutters with which to attack the old chips, an IC insertion tool, tweezers and an X-ACTO® knife; even two thicknesses of desoldering braid. All this and instructions too, rolled from out of the neat, cylindrical package. "Give us a lever and a fulcrum to rest it upon," we thought, "and we will move the world. Or at least fatten one little Mac."

The manual was very specific in its instructions. It would have been helpful if the pictures had been larger but, with a little effort, they all made sense.

Unsoldering the sixteen old chips was, indeed, a task that would have tried the patience of Sisyphus in its exacting repetitiveness. Using the included tools, every leg is cut from the old chips. Then, each leg is individually desoldered and removed from the board. Although the instructions are excellent as to this desoldering technique and, in our case, it went without a hitch, we feel constrained to point out that this is the most delicate part of the operation. Too heavy a hand and you can indeed fry the traces on your digital board.

Following the over and over and over again cutting and desoldering of the old chips came the equally repetitive task of cleaning the solder from all of those tiny holes. The included desoldering braid worked well but, again, a steady and careful hand is needed. Then we got to install the new sockets. Our advice: when doing these kind of tasks take your time, and if your mind begins to wander, go do something interesting for a little while and return later on.

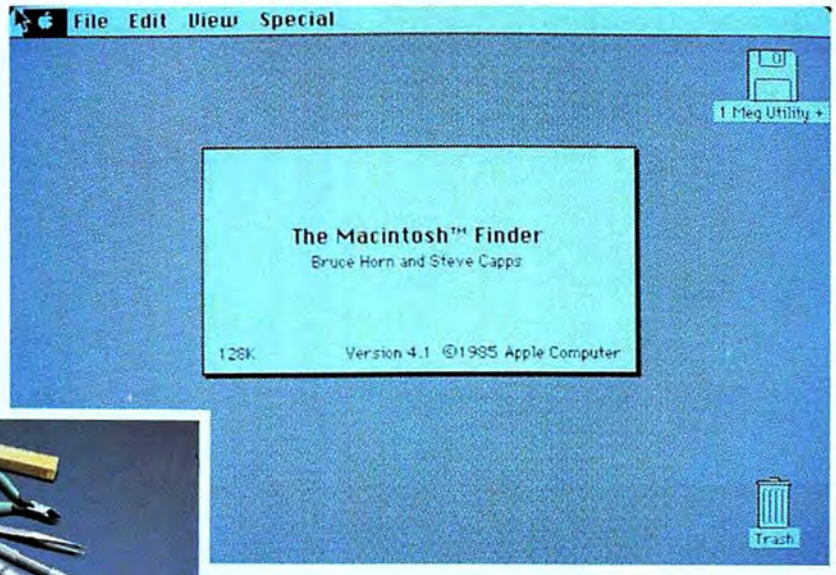
The rest of the job, installing the multiplexer chip, which helps the Mac figure out how big it's gotten, putting in a capacitor and a resistor, cutting one trace on the board and removing one jumper was all a byte of cake.

Finally, we popped in a disk with a Finder (Version 4.1) and, sure enough, our 128K Mac was a great big, old fat 512K monster anxious and raring to go and compute something.

If you have had experience with a soldering iron and have a yen to fatten your own Mac, then kits from reputable manufacturers seem to be a good alternative to consider. Check the pictures and see if the job looks like something you'd feel comfortable with. If you then feel hesitant, get a dealer upgrade.

DELIVERING A FAT MAC





1

About Finder (in Version 4.1, not 1.1g) tells you the truth about what's really inside your Mac.



2

Micro-C includes everything you need for the conversion: 256K RAM chips and low profile sockets, a multiplexer and resistors and a capacitor for the multiplexer. Tools include wire cutters, a chip insertion tool, an X-ACTO knife for cutting the critical trace and 3 rolls of desoldering braid. What you *won't* find is solder. If you need solder, you shouldn't be practicing on a Macintosh circuit board.



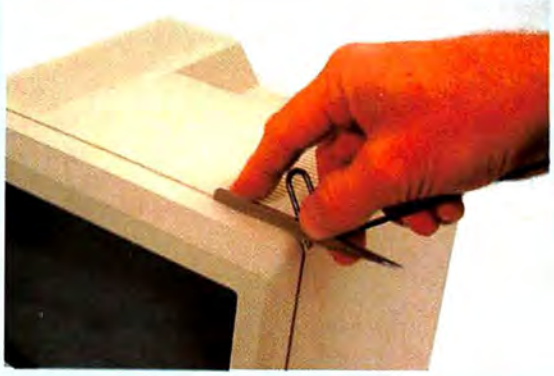
3 **4**

After removing all the cables *(including* the keyboard) and the programmer's switch, use the enclosed hex wrench to remove the five screws that hold the case. Don't forget the one hidden in the battery compartment.



5

Sliding the hex wrench between the tongues of the forceps (tweezers) forces the Mac case apart.



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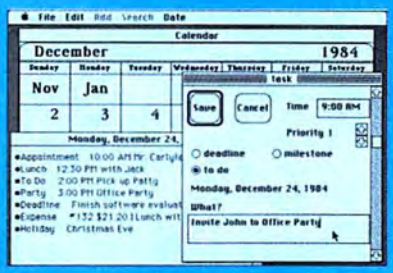
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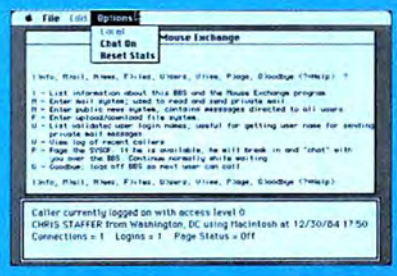
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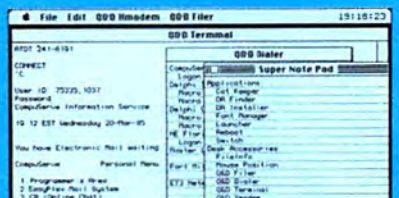


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Mouse Exchange™ Terminal. This program is a simple, yet sophisticated terminal emulator from the people who brought you 'Free Term' on Apple's software supplement. It emulates multiple types of terminals, has a built-in screen editor, and easy-to-use macros and dialer functions. Upload and download in ASCII, XMODEM, and MacBinary. *Works on the 128K Macintosh, and with ALL modems.*





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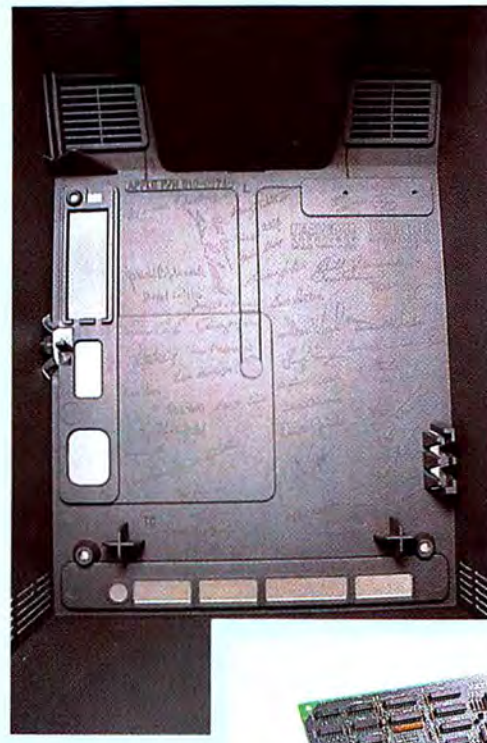
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DELIVERING A FAT MAC



6 Slowly and carefully remove the outer shell.



7 If you're historically minded, the interior of the case is a graduate record of the original Mac development team. All the right signatures are here, from Jobs to Hertzfeld.

8 After carefully unplugging the analog board connector and slipping the shielding foil over the connectors at the rear of the digital board, carefully slide out the digital board.

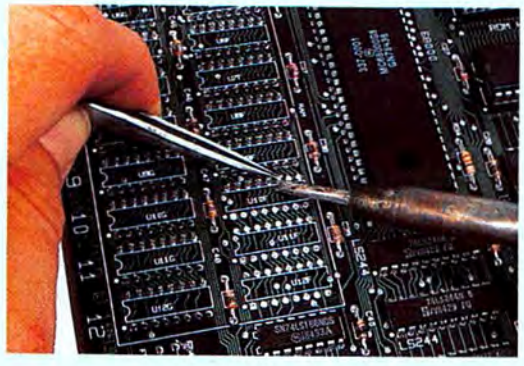


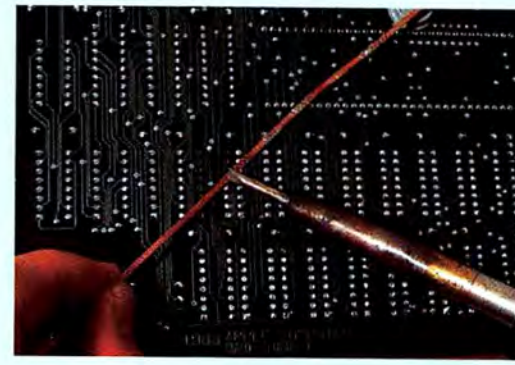


9 Those old 64K memory chips have to go. The cutters provided do an excellent job.

10 The RAM chip legs must be removed now by heating up the pin ends and drawing them out with tweezers.

11 Solder removing wick is provided to clean out the chip holes in the board. These *must* be cleaned out correctly.





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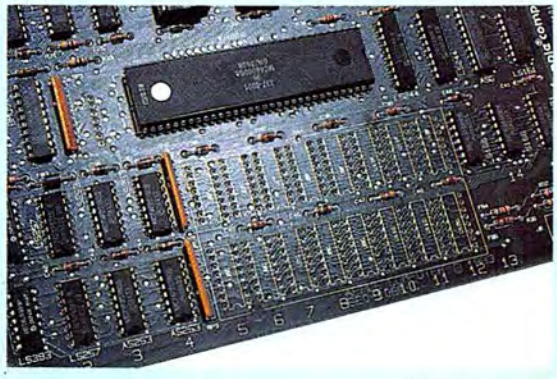
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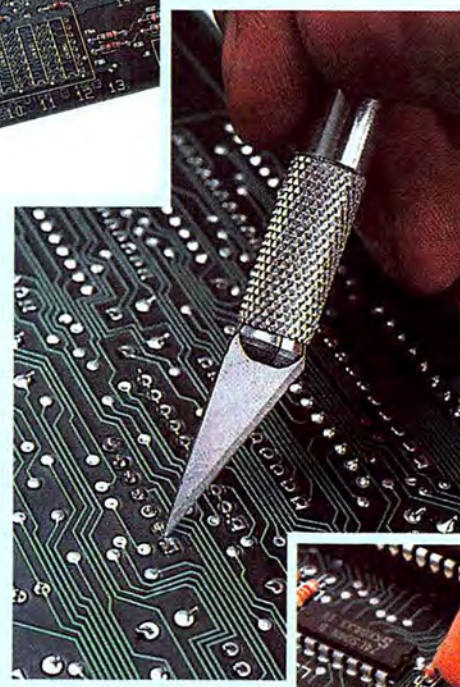
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DELIVERING A FAT MAC

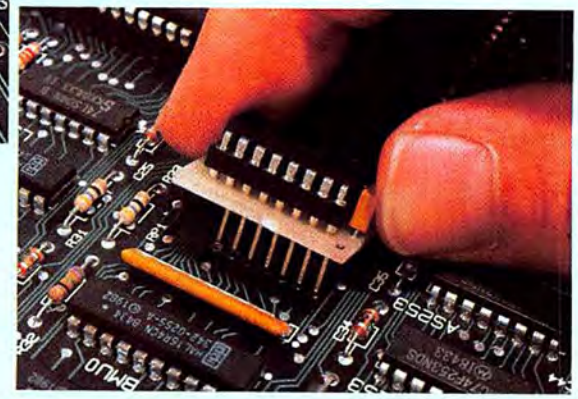


12 If you've cleaned out the chip holes carefully you are almost ready.

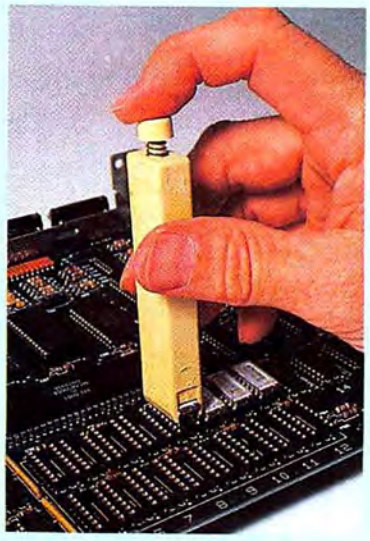


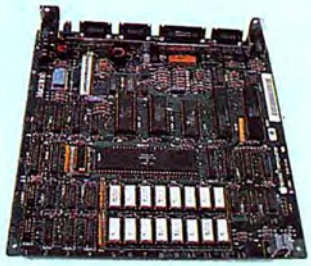
13 The knife enclosed is used to cut one single trace which will permit the 68000 processor to address the Mac as a 512K system.

14 Install the PC board. This houses the enclosed multiplexer.



15 Now it's time to slip in the 16 new RAM chips. The enclosed tool is safer than doing it by eye.





16 Your fully assembled board is now ready to go back where it came from . . . the Macintosh. Hope you remembered how you took it apart.

17 A sexy programmer's trick is to hold down the rearmost programmer's switch and turn the power on. An angry Mac face with 0F00D as the message should appear indicating that you are now the proud owner of a 512K Mac.



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THE GOURMET'S ICON COOKBOOK

BY BILL STEINBERG

PART 2

Your desktop is full of icons: fancy icons, plain icons. We know how to fix the fancies, but, oh, those plain icons. It's time to fix that.

YOUR OWN ICON. ONCE IT WAS A dream, now it's within reach. Building on the base established last month, we'll create a custom icon in a virgin application (that's an application that has only had the generic "hand on the paper" icon previously). *ResEdit* prototype 0.7 (the program used last time) will be used this time to build the entire file from scratch. To save some time, we'll put the new icon in a blank document. What? How can that be? Doesn't an icon have to be in an application?

No. A document can hold the required resources; it isn't necessary to build a whole application. This document will not do anything, nor will it be readable by anything (except *ResEdit*). It will, however, hold the new icon, and look pretty on the desktop.

Decide on two things before you start: the creator name and the filetype. If this were a commercial product, Apple would have to approve the creator selection. Since it's not, anything can be used, as long as its not the predefined stuff like ICON and ICN# and BNDL. Let's use MINE as the creator name and HLDR for the filetype.

Put your work disk back in, and launch *ResEdit*. (There is a minor bug in the prototype 0.7 version of *ResEdit* that will appear as we create some resources. The bug isn't destructive, and will be pointed out each time it pops up.)

First create a new file to hold the icon resources. Make sure that none of the files are selected in the work disk's window. *ResEdit* has a very powerful menu command called NEW. NEW can be used to create new files, new resources and new resource types. Pull down the EDIT menu and select NEW. A dialog box will appear, asking for a filename. Enter an appropriate filename, such as "MyIcon." A new window will open; this is your new file's *ResEdit* window. If MyIcon's window was closed now, and *ResEdit* exited, you'd find an empty (0 K) file, with a generic document icon.

Creating a New Icon's Resources with ResEdit

While the volume window is open, selecting NEW creates a new file. Now that the open window is our new file (MyIcon), selecting NEW will create a new resource. Make sure that MyIcon is still the top (selected) window, and select NEW again (Figure 1). Each resource type will be created in this way.

The new window that appears is the Create New Resource dialog box. The scroll rectangle on the left side contains all the different resource types that *ResEdit* knows about. The TextEdit rectangle in the top right corner allows users to enter resource types that

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A GOURMET'S ICON COOKBOOK

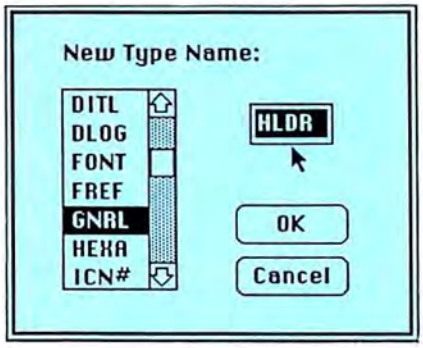


Fig. 1: Selecting GNRL allows users to specify any new type name. Type names must have four characters (numbers and/or letters).

INSIDE THE VERSION

What's actually in a version resource? Could be nothing at all, but usually inspection will show a lot of hex numbers. There is usually a text string detailing the version number. Since *ResEdit* doesn't know what a MACA (or any other version) resource is, the data is *presented* as a jumble of hex numbers (or data). If you suspect that the resource holds a Pascal format, length-delimited string (that's what these things are called) then *ResEdit* can read the string. Tell *ResEdit* to open a resource and display it as if it was a different type. Do this by opening the resource while holding down the shift and option keys while you double-click. You will get a special window that allows you to select how you want the resource displayed. Scroll down to STR and double-click on it. You can now read this string and change it at will.

ResEdit knows about. The TextEdit rectangle in the top right corner allows users to enter resource types that *ResEdit* doesn't know about. We'll use both in the next few steps.

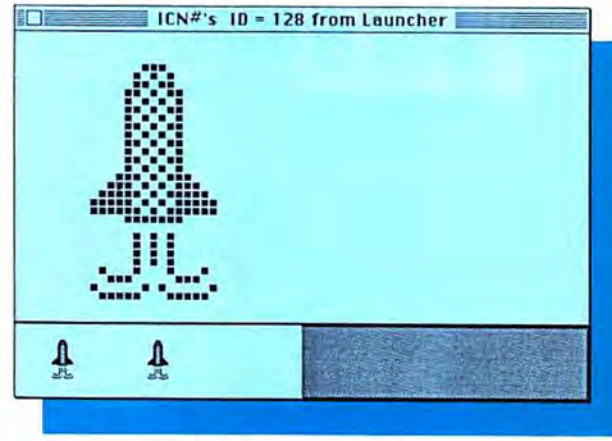
Do the fun resource first. Scroll down the Create New Resource list until you find the ICN# resource type. Double-click on ICN#, and the dialog box will disappear. In its place an "ICN#'s from MyIcon" window will open, and on top of that, an ICN# editing window with a randomly chosen resource number. It's time to get creative again. In the lefthand part of the ICN# editing window, create a simple masterpiece. I created the icon shown in Figure 2 for my application, *Launcher*.

After the icon is finished, the mask has to be created. *ResEdit* has a feature to help make the mask. The last menu, ICN#, has a choice called DATA → MASK. Select it. Notice that an exact copy of the icon in the left part of the window was copied to the mask region, on the right side of the window. Now just fill in the insides of the image in the mask. Normally, the mask should be what you would get if you surrounded the icon with the *MacPaint* lariat and filled it with black. However, you can achieve special effects by careful editing of the mask. Note the effect that the slightly altered mask has on the *Launcher* icon's mask when selected (Figure 3).

After saving your masterpiece, change the random resource number that *ResEdit* generated. Pull down the FILE menu and select Get Info. Another window will open, with the resource number field already selected.

Type in 128. Choosing a resource number is pretty much up to you (within specified limits). All will work as long as the mapping is right in the BNDL resource. Since Apple's examples all use the numbers here, they're as good as any to use. After you type in 128, close the Info window. Now close the ICN# editing

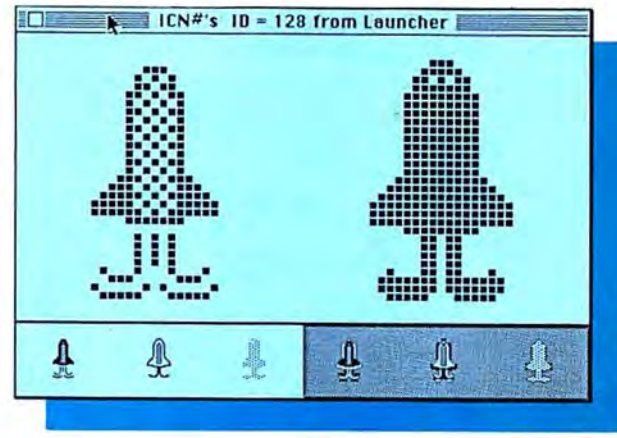
Fig. 2: The new icon is created in the left half of the ICN# editing window.



BE SAFE NOT SORRY

Hacking around with the innards of a Macintosh application is not something to be taken lightly; *ResEdit* has the power to *totally* mess up your files. (Read that last sentence again!) Make sure that you are working on *backups*, not on originals; there is no reason for you to have to look down at a tear-stained keyboard while ripping out your hair. Don't take the chance of trashing a file (or disk) that you have no backup for.

Fig. 3: The icon mask has now been created. Notice the effect of the mask in the small illustrations at the bottom.



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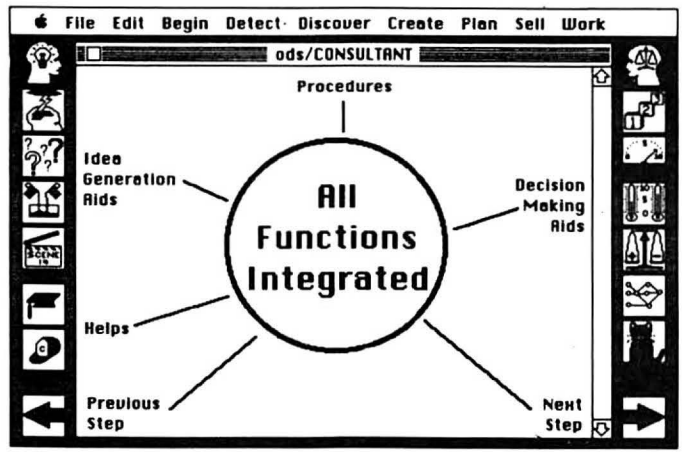
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window, bringing the "ICN#'s from MyIcon" window to the front.

Here's where that bug can crop up. When the ICN# editing window closes down, the "ICN#'s from MyIcon" window is not always updated properly. If the interior of the window is not redrawn, don't try to select any of the ICN#'s. Close the window before doing anything else. (Close it down now anyway.)

Now create the FREF. Since there is only one ICN#, only one FREF must be created. Select NEW again (from the FILE menu), and this time select FREF from the New Resource Type window. An FREF editing window (with a random ID#) will appear. Mouse down in the rectangle next to FileType and type in HLDR. Press the TAB key to advance to the next field (icon LocalID), and type in a 0. Leave the filename field empty. Before closing the window, select Get Info from the FILE menu, and change the FREF's ID number to 128. The FREF's ID# is also somewhat arbitrary, and there is no connection between the ICN# resource being numbered 128 and the FREF resource being numbered 128. Close the FREF editing window, leaving the FREF in the MyIcon window.

Now for the version resource. Select NEW again (from the FILE menu), and this time instead of selecting a predefined resource from the New Resource Type window, type in MINE and then select OK. The dialog will go away, and two more windows will pop up. (This sequence should be familiar by now.) Select Get Info from the FILE menu, and change the resource number to 0. Close the Info box and the two MINE windows. Finally, close this resource.

On to the last resource. With the MyIcon window active (on top), select NEW from the FILE menu, and create a new BNDL resource. Renumber the new BNDL resource to 128 (Figure 4). The first two fields of the BNDL are waiting to be filled in, so enter MINE in the ownerName field, tab to the ownerID field, and enter 0. Select the row of five asterisks (a rectangle will appear around it).

Now go up to the FILE menu and select NEW twice. numTypes will change from -1 to 1. Mouse down in the first type field (scroll back to it; the first type field is after the numTypes field), and enter ICN#, then hit the tab key and enter FREF into the second type field. Scroll back a bit, and click on the five dashes right below the ICN# type.

Go up to the FILE menu again and select NEW. The "# of this type" field will change from -1 to 0, and a couple of new fields will show up. Mouse down in the type field, in the word ICN#, then tab once to put the cursor in the localID field that just appeared. (That's another minor bug. . . .) Enter a 0 here, and tab to the next field, rsrcID. Type in a 128. Mouse down in the five dashes just after the FREF type field, and select NEW from the FILE menu.

Using the same technique described above, enter a localID number of 0 and a rsrcID number of 128. The completed BNDL should look like Figure 5.

Close down the two BNDL windows, close down the MyIcon window (saving the file when asked), and exit *ResEdit*. That's all *ResEdit* can do for now.



Fig. 4: Once a new BNDL resource has been created, change its ID number using the Info command of the File menu.

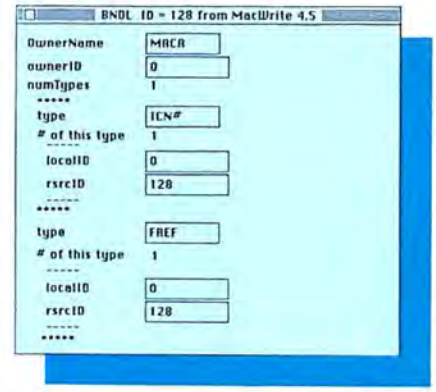


Fig. 5: The completed BNDL resource for a new icon.

WHERE TO GET IT

ResEdit is available from many sources. It is an Apple Computer developer's tool and prototype #0.7 can be found in the June 1985 Software Supplement. The latest version can also be found in MAUG's Macintosh Users Data Library 3 ("GO PCS23" on CompuServe). Various versions can also be had from the libraries and bulletin boards of many user groups. It is free.

Bundle Bit, Creator Name and Filetype

The final steps involve setting the Finder info stored with the filename in the disk's directory. *ResEdit* can't do this; other tools are required to set these three fields. You can use either a shareware desk accessory called "Set File," a developer's application called *SETFILE*, a very powerful shareware disk editor called *Fedit* or a commercial desk accessory called "FileInfo." The first three are available on MAUG (on CompuServe) and through users groups; *Fedit* is also on the June 1985 Software Supplement and "FileInfo" comes on Dreams of the Phoenix's *Quick and Dirty Utilities, Volume One*. All these tools have a slightly different way of setting the Finder info, though all will accomplish the same thing. Using a desk accessory allows setting up the remaining fields before leaving *ResEdit*.

Perform the same actions no matter which tool is used. First select the file MyIcon and display its file attributes. (This step is where these programs differ.) Now make sure the Bundle box is checked, the filetype is set to MINE and the creator or owner name is set to HLDR. When everything looks right, click the Set It or Change box.

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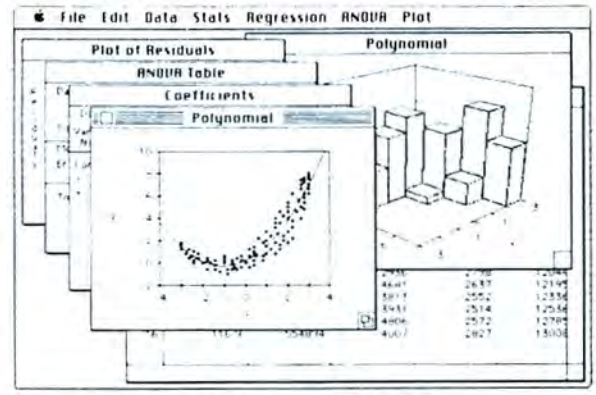
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MR. MAC

Bill Atkinson may be best known for his brilliant MacPaint program, but his importance at Apple and to Mac owners goes much deeper.



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Is QuickDraw the same on the Macintosh as it was on the Lisa?



Yes. It was very important for compatibility that the two were identical. One of the difficulties was trimming QuickDraw down to fit into the Mac ROM (read-only memory). I kept squeezing it down, reorganizing, refactoring, finding code I could share. It took three and a half years to get it that small. I pride myself that it's down to only 40,000 lines in assembly language.



Was Lisa originally conceived as a graphics-oriented screen and interface, or was that something you brought to it?



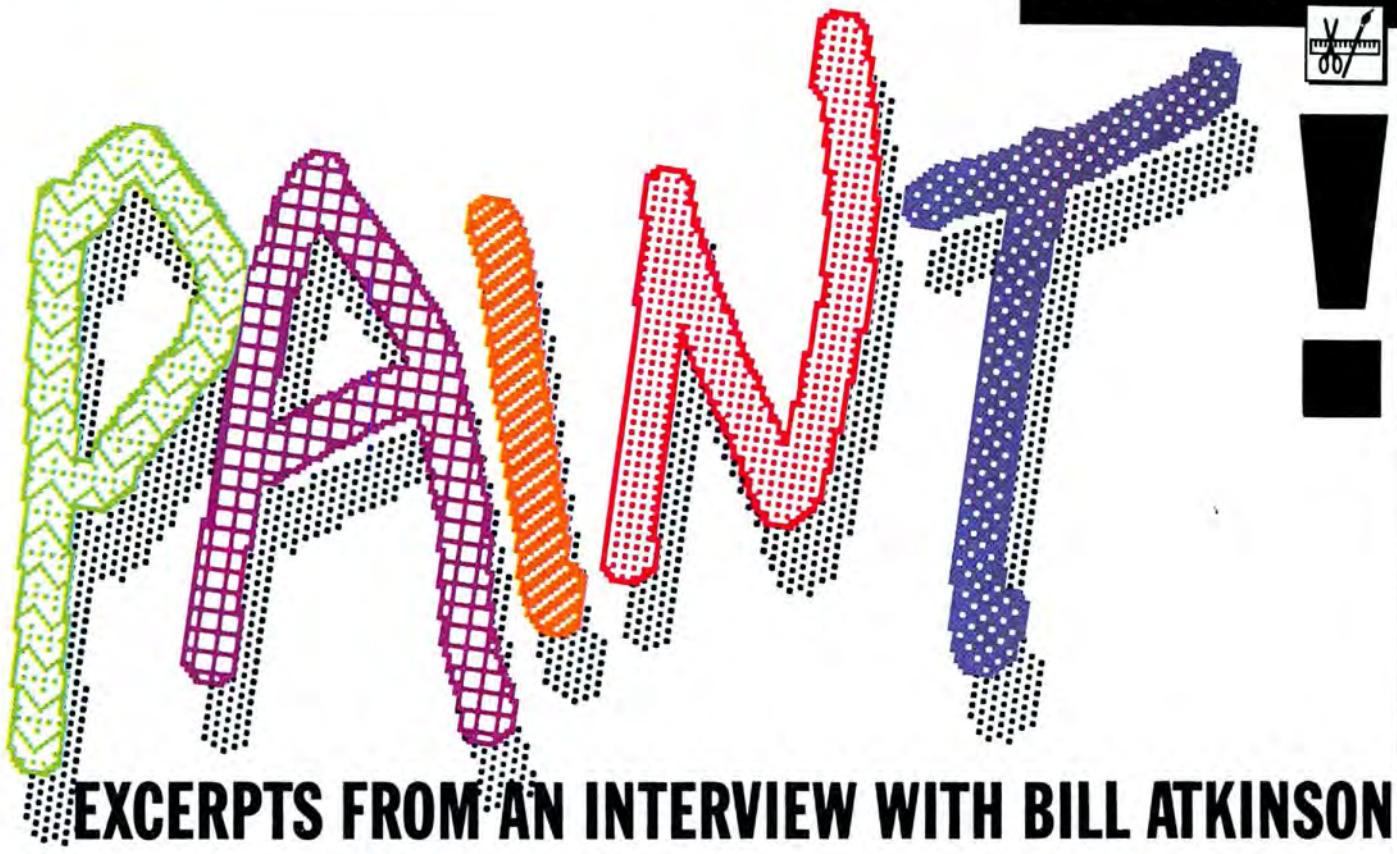
During Lisa's development, we didn't know what we were going to build. We knew we were going to build something a little more for the office, or small business, than the Apple II, and that the emphasis would be on graphics. That was my doing. I wanted QuickDraw and Lisa given more capability and power. Overall, I think it would be fair to say that QuickDraw was developed synergistically with the applications. I would try to stay two or three months ahead of where I knew the applications for Lisa were going to be. When the application developers came to a point where they were running out of horsepower, or they needed a new capability, I had usually foreseen this situation and was working on a solution.



How would you describe the Macintosh, in terms of the concept and philosophy of the design?



Initially, we thought of it as "VolksLisa." We had something really neat in Lisa, but it was just too expensive to reach many people. We wanted to make a machine that was far more for *us*, instead of for *them*. I think of Lisa as sort of a prototype Mac. We shipped it and it was a good machine, but our next round of building and development was a whole lot better. We built on top of what we knew, incorporating all the good stuff, but we streamlined it and cleaned it up. We also knew we had to give up some elements. We had to pare down what could work in a small amount of



EXCERPTS FROM AN INTERVIEW WITH BILL ATKINSON

RAM (random-access memory). The hard disk would not be as integral to the design. The first barrier was just making it more compact and more personal.



How did the Macintosh user interface—the desktop and windows—develop?



We really evolved this whole thing. It didn't just come to us. It was very slow and painful. It took a lot of people to get from one step to another. And for a long time everything we were doing was with mock-ups. There were no applications behind the screen, and everything was just for show. It took a long time to get the first pull-down menus. At first they were across the top of each *window* as opposed to where they are today, at the top of the *screen*. We ran into all kinds of problems with that, such as what happens when the windows are small and the menus are long and go off the bottom? Do they hang off or bounce back upward? What happens when a window is very narrow and you can't see all the menu titles? We ended up going to a much simpler scheme of things that always gives the maximum height and always has the full screen width: putting the menus at the top of the *screen* as opposed to the top of the *windows*.

And then for a while we were kind of confused about the difference between a folder and a window. We had them all lined up along the bottom of the screen kind of like a file drawer with all the tabs of folders onscreen—very confusing. None of this came easily for us. We evolved the look of the Macintosh screen by trial and error, and watching people interact with it. .



Which came first, the Macintosh or *MacPaint*?



The Macintosh came first. It's hard to say whether *MacPaint* existed or was the evolution of a little sketching program that I threw together for Lisa. It was called Sketchpad, and it just had a single palette along the left with patterns in it and there was only one tool. That tool was similar to the Filled Free-form tool, except that you could make multiple clicks.



How did you come up with the Tool Shelf—tools onscreen, not hidden in a menu?



We had this idea for a structured graphics editor for the Lisa—that essentially you would select a rectangle and say what to put in it. We got it in our heads that it was good to select first and then operate—something like in a word processor, where you select something and then say cut it, for instance, or select something and tell the computer to make it boldface. And so we had this model of a structured graphics editor, but it was a joke. . .it was really bad. I felt that it worked for editing—for changing the attributes of existing stuff—but for fresh creation, and particularly in graphics, you needed a pre-fix operation. Fundamentally, you cannot make a curved line by stretching out a rectangle and saying, "Put a curved line in there." You really have to say to the computer ahead of time, "I'm about to make a curved line, so now you can give me good feedback while I'm making the curved line"—good feedback being the curved line itself. That was the religion in those days: post-fix was the way to go—you make a blind selection and then tell the com-

(continued on page 147)

ANSWERS FROM THE MACTEAM

GOT A MAC PROBLEM? SOMETHING that you'd like explained? Something that you can't find the answer for anywhere else? Apple's Dan Cochran will answer your questions every month in this space. When the questions are too tough for him, other members of the Mac Team will help out. So ask what you need to know and get your answer straight from the source!

Send your questions to Dan care of ***MacUser,*** *25 West 39th Street, New York, NY 10018. Dan will read all of your questions, but unfortunately, he can't answer individual queries. Watch this space for the pick of each month's Q and A crop.*

What does the Mac mean when it says, "An application can't be found to open this file."?

Each application puts a unique signature on each document that it creates. These signatures consist of two sets of four characters each (letters and numbers). The first is the file type and the second is the code name of the file's creator application. Uppercase and lowercase are significant so that MACU and MacU are different to the Finder, the program that interprets these signatures.

Many applications that also create special formatted files can create unformatted files of type TEXT. Many applications can open TEXT files, regardless of creator, but usually both parts matter, and must be what the application expects.

An application can usually only open files of its specific type. If a document has already seen its creator application since the last power up, it will be able to open, although it will ask for the disk with the application if it is not currently mounted.

Sometimes a document will send the "Can't open" message if the creator application is mounted but has not had its bundle bit set. The bundle bit is one of the Finder attribute bits that tells the Finder that the document is associated with a bundle resource which points to the creator application. There are many methods of setting bundle bits; try such programs as *SetFile* or *Fedit*.

Why are just about all the components and chips soldered onto the master logic board?

There are three reasons for all this soldering: (1) reliability, (2) manufacturing requirements and (3) economics.

Many manufacturers use chip sockets on their circuit boards. The sockets, rather than the actual chips, are soldered to the board and the chips are then manually inserted into the sockets.

Sockets make life much easier when an upgrade occurs or when a defective chip needs replacement (it's a lot easier to pull a chip out of a socket than it is to unsolder it). Sockets, however, don't provide the reliability factor we expect from our products. While a socket can be soldered to a circuit board as reliably as a chip, the sockets themselves can collect debris, become contaminated and ultimately result in faulty contacts between the chip and the socket. And it only takes one faulty socket connection on a 32-pin chip to bring everything to a grinding halt. Soldering the IC directly to the board results in a much more reliable contact, and ergo, a much more reliable product.

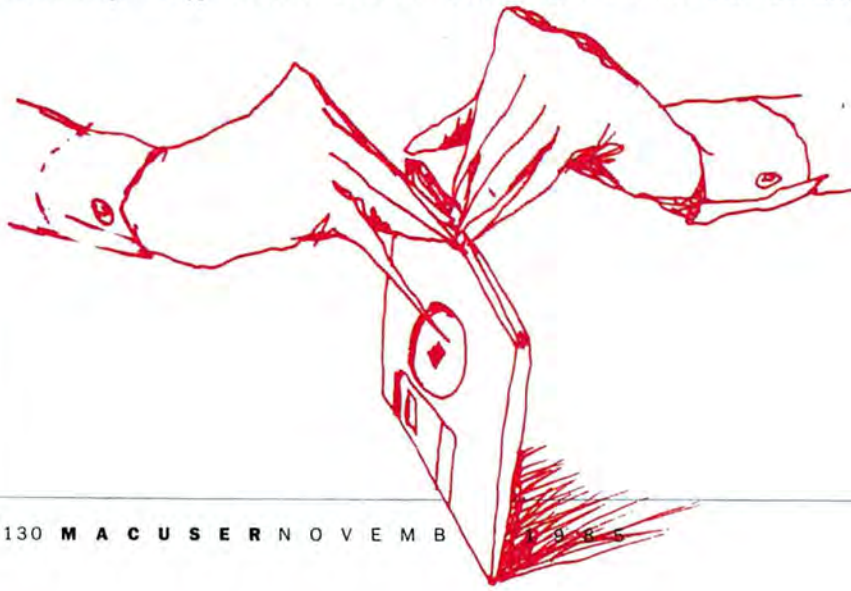
Then there's manufacturing. The Macintosh plant is a showplace of state-of-the-art, automated manufacturing techniques. A robotic production line collates the necessary components required for each logic board and then automatically inserts the various components into their respective locations on the board. When all of the components are in place the bottom of the board is then passed over a thin wave of liquid solder. Using sockets would complicate this process since it's much easier for a robot to drop a chip into a set of holes in the circuit board then to force it into a socket.

Of course, manufacturing techniques are economically motivated; we didn't build the Macintosh plant just to be the first one on the block. Building reliable products in an economic fashion benefits all concerned — Apple, our dealers and ultimately the marketplace.

How is a foreign version of a Macintosh software product created?

Most software products (with some obvious exceptions like accounting and tax programs), and especially productivity tools, games and computer languages, have international appeal. The main differences between, for example, a French version of *Multiplan* and a domestic version are found only in the program text, menus and in the formats used for numbers, currency, dates and time.

Like anything else, there is a right way and a wrong way to do international products. The Macintosh developer actually has to go out of the way to do it improperly. A well-constucted Macintosh program will not have even one line of text hard coded directly into the program. Rather, all program text, whether it's contained in menus, alert boxes, or help files, are stored as resources. These resources can be edited (using tools like the *Resource Editor*) by a person with no technical training. So if



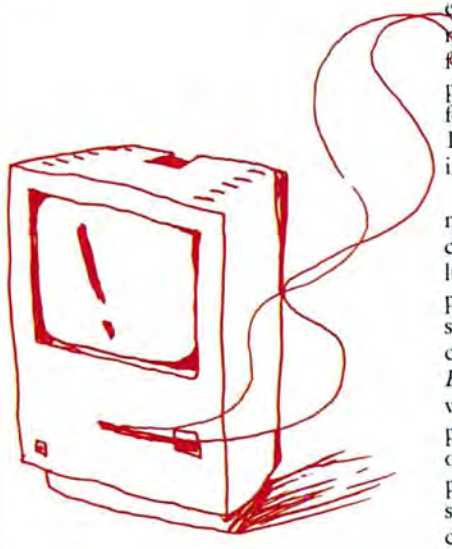
BLAIR THORNLEY



you are converting a domestic product for the French marketplace all you really need is a translator who knows how to use a keyboard. The same thing holds true for currency and date formats. The International Utilities Package should be used by all Macintosh applications and contains programming routines that enable the developer to make an application country-independent.

Can leaving a disk in the drive while the power's off damage any of my equipment?

Chances are it won't. But when a disk is left in the drive, the electromagnetic sensor that reads data is directly over the disk, ready to go. A small burst of static electricity through it could accidentally erase a small amount of information on the disk. While the damaged area might be tiny in terms of actual number of bits erased, the missing data could disable the whole program.



Our technicians have calculated the odds on this happening. A disk left in the drive has a 0.02% chance of being damaged. If the disk was removed its chances of being damaged in the average disk storage environment are half that or 0.01%, so on the whole it is better to remove all disks from the Mac when you shut it off.

How is an Apple font created? What tools are used? How are sizes set?

The wide variety of fonts available to the Macintosh user are an important and critical element in maintaining the real-life Macintosh metaphor. The history of literature and written communication is paralleled by the evolution of the symbols used to most effectively and aesthetically translate our abstract thoughts to hard copy.

Visual aspects of our written communication are equally important to the actual content and can often be the difference between effective communication and a wasted effort (try writing a complaint letter in Times font on an Apple LaserWriter and you'll see what I mean). Indeed, it would be a dull world if everything was 12-point Geneva.

A Macintosh font is a set of up to 255 distinct characters and all characters have to be defined in a single font (Note: select the Key Caps Desk Accessory from the Apple Menu, hold down the Shift and Option keys simultaneously, and note the many empty boxes within the Key Caps windows — these are all undefined characters in a font).

Each character in a font is defined by pixels arranged in rows and columns that correspond to the width and height of the font. The size of the characters is given in points, a typographical term that stands for 1/72nd of an inch. Therefore a 10-point font is approximately 1/7 of an inch high.

While early pioneers in written communication had to work with stone and chisel, modern-day authors now have the luxury of typewriters and personal computers. Today's font designers enjoy similar amenities. Macintosh fonts are created using utility programs like the *Font Editor* and the *Resource Editor* (available with the Software Supplement). These programs work very much like the FatBits option in *MacPaint*. The font designer is presented with a grid within which he or she can turn pixels on or off to define each character associated with a particular font. The font designer must explicitly design the font for each point size desired.

When an application program, such as *MacWrite*, requests a particular font size the Resource Manager (part of the Macintosh ROM) will find the requested font and read it into memory. QuickDraw is the part of the Macintosh ROM that is responsible for displaying everything you see on the Macintosh display, including fonts.

Before QuickDraw can display a



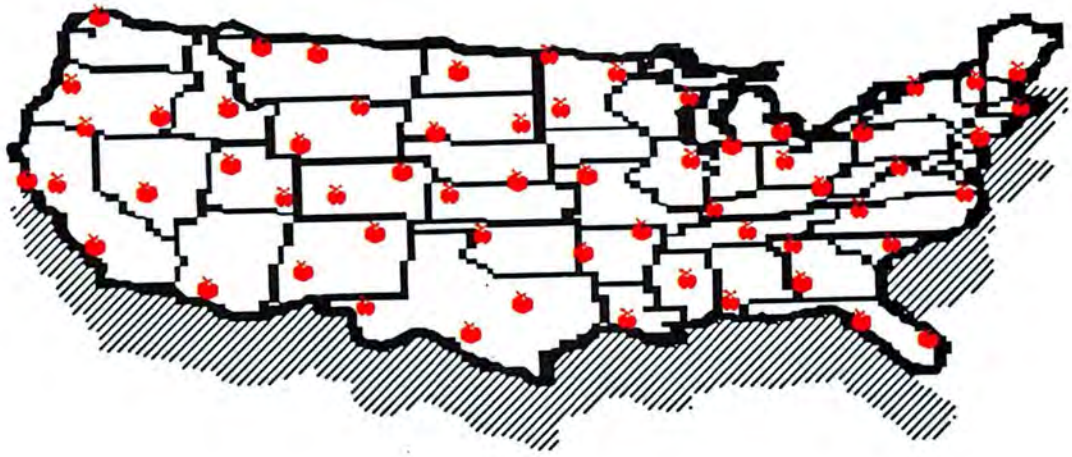
character it lets the Font Manager know what size and scaling factors it requires. If the exact size requested isn't available the Font Manager will look for a similar size font that it can scale up or down. Scaled fonts don't look as impressive as non-scaled fonts (compare 18-point London to 24-point London).

What exactly is public-domain software? Is all of the software on electronic bulletin-boards in the public domain?

Authors who choose to put their software into the public domain essentially give up all their rights to the product, including their rights under copyright law to control the reproduction, modification and distribution of the software. Software products that bear copyright notices, either in the object code, in a sign-on screen, in the documentation or on the diskette label are not in the public domain and may be reproduced only with the owner's permission.

One reason this distinction is important today is because of the proliferation of electronic services and bulletin boards. These services are extremely useful and provide a very timely and cost-effective means for distributing computer programs and files. If, however, all software that appeared on electronic services became public domain simply because of the fact that it was electronically available it would discourage use of this media for distributing programs and information.

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Many exciting new events are planned such as on-line conferences with celebrity guests. In the past, MAUG has featured real-time talks with Steve Wozniak, Bill Atkinson, Mark Pelczarski, Doug Clapp and other stars from the world of Apple computing. You just never know who you'll meet on MAUG!

What Is MAUG Anyway?

If your computer has a modem peripheral and can use the telephone line you can join in on all the MAUG excitement! Presently three huge electronic bulletin-board areas await your joining. Each area has room for hundreds of public messages, thousands of programs to share and a real-time conference line. The three MAUG areas include:

- The Macintosh Users Group Forum: A lively area for Macintosh owners to meet and share thousands of programs and files. Subtopics include hardware and software, games and graphics, music and business. Whether you've a Fat Mac or a skinny one, a Lisa or a Macintosh XL, you'll find MAUG as indispensable as your mouse!

- The Macintosh Developers Forum: Whether you're developing hardware or software for the Macintosh you'll be in on instant updates to the *Inside Macintosh* Software Supplement, informal support direct from the Mac Team in Cupertino, as well as being able to meet hundreds of your peers for in-depth information exchanges.

- The Apple II And III Users Group Forum: MAUG started in 1979 about the Apple II. And, with us, it's been a neverending love affair. These 8-bit, wonder machines are as exciting as ever and MAUG proves it with hundreds and hundreds of messages related to hardware and software, games and graphics, power business uses and more — not to mention the thousands of programs and files available.

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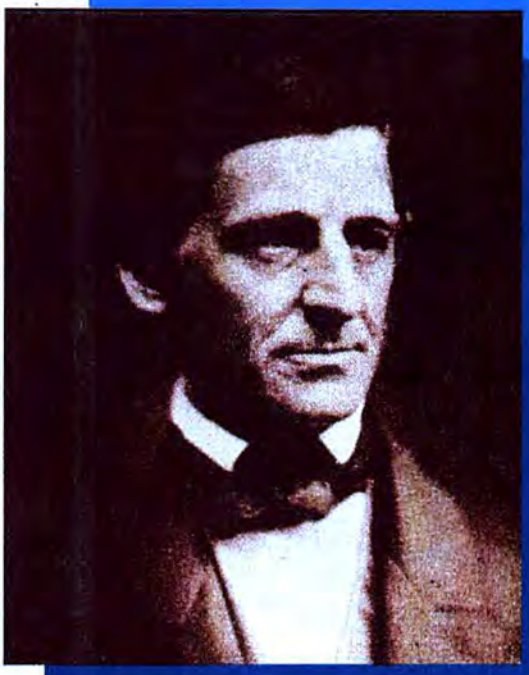
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"If a man can write a better book, preach a better sermon, or make a better mousetrap than his neighbor, though he builds his house in the woods the world will make a beaten path to his door."



Attributed to Ralph Waldo Emerson (1803-1882) by S.B. Yule and Mary S. Keene

We hope so, Ralph. We hope so!

Fact is, folks, we're looking to part you from your hard earned money in exchange for a subscription to "a better mousetrap." MacUser magazine.

We view MacUser primarily as a tool. A tool to help you unleash the power of your Macintosh. A tool to help you make informed decisions on purchasing software and peripherals. A tool that different readers can apply to different needs at different levels of expertise.

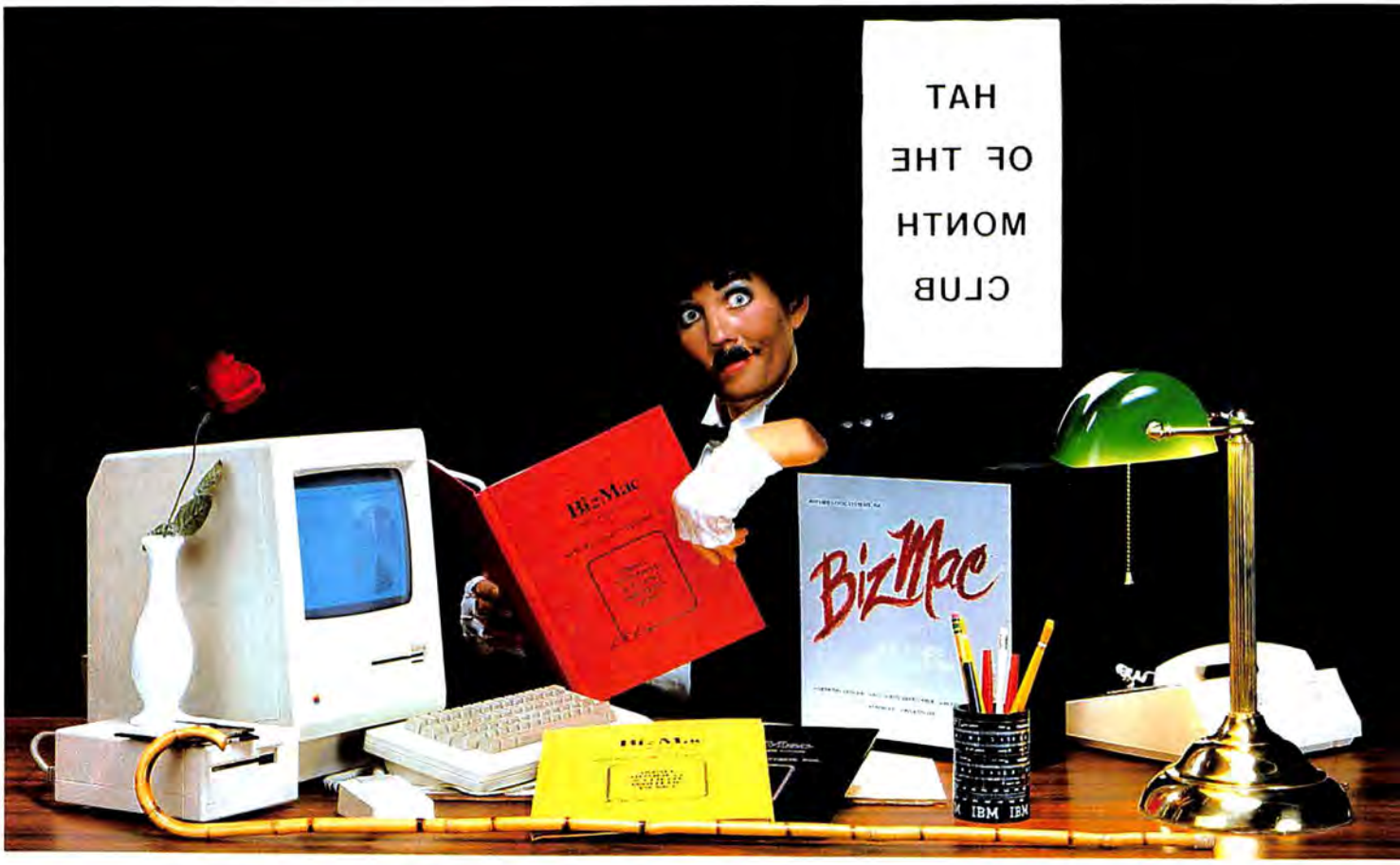
MacUser is not a lifestyle magazine. We're more interested in getting the most out of the beast rather than satisfying some "yuppie computer" marketing hype. And frankly we don't subscribe completely to "the computer for the rest of us" ethos. The Macintosh is certainly a wonderful machine, and it is intuitive. and its users tend to be innovators who don't buy computers based on a philosophy that no-one ever got fired for buying Big Blue. But, like any machine, the more you know about your Macintosh, the better you can use it. And that's the whole point of MacUser.

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MINIFINDERS

Ever go into a computer store and wish you had someone you could trust tell you what the various programs and accessories do and how well they do it? These MiniFinders detail items chosen by the editors. Each one has been rated from one to five mice and there are even a few bomb icons scattered here and there. Red names indicate this month's additions. Next time you have to find products you can count on, count on MacUser*!*

COMMUNICATIONS/NETWORKING

inTouch is a full-featured telecommunications program. It has its own communications command language (the most powerful in any Mac comm program) that lets users do complete unattended sessions. Supports Xmodem, MacBinary and Kermit. Has a macro key function. Ease of use is increased by the large number of communication documents and sample command language files provided. $149. Software Masters, Suite BB, 3330 Hillcroft, Houston, TX 77057.

MacDasher is a communications program with one purpose: to emulate a Data General D210 terminal. It does an excellent job at that. $49. Kaz Business Systems, Suite 1620, 10 Columbus Circle, New York, NY 10019.

MacTerminal provides basic telecommunications and terminal emulation for the Mac user. It emulates DEC VT100s, IBM 3278s and plain teletypewriters (TTYs). Its usefulness as a telecommunications package is somewhat limited since it does not have macros nor any sort of auto redial/auto logon capability. It is really for those people needing faithful VT100 or IBM 3278 emulation — it is superb at those. $99. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014.

MITE offers basic communications capabilities along with VT100 emulation. Complete but somewhat awkward to use. $145. Mycroft Labs, Inc., PO Box 6045, Tallahassee, FL 32314.

Mouse Exchange BBS turns a Mac into an electronic bulletin board system. Allows private electronic mail, public message areas and file distribution. Users can be granted different access levels and password security is supported. Supports Xmodem file transfers. External drive or hard disk recommended. $39.95. Dreams of the Phoenix, Inc., PO Box 10273, Jacksonville, FL 32247.

SmartCom II balances power and ease of use. Capable of unattended operation and has a very powerful command language. Does real-time graphics when run on a 512K and connected to a 512K Mac. Supports MacBinary, Xmodem, and Hayes Verification protocols. The large screen buffer can easily be archived both to the printer and to disk. This is a very complete program marred only by the lack of keyboard macros. $149. Hayes Microcomputer Products, Inc., 5923 Peachtree Industrial Blvd., Norcross, GA 30092.

Straight Talk is a simple, straightforward communications program that includes a link to the Dow Jones News/Retrieval Service and other major on-line services. It runs at either 300 or 1200 baud only. Special features work well with DJN/R. Includes a free password to the Dow Jones network with 1 hour of unrestricted use. $79. Dow Jones & Co., Inc., PO Box 300, Princeton, NJ 08540.

Telescape is the power telecommunicator's terminal program. It can be configured to emulate any terminal and has all the advanced features (except unattended operation). Features include a small electronic mail miniBBS option. Unfortunately the documentation does not adequately explain the features and much of the power will be unavailable to all but the pros (who can figure it out on their own). $125. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301.

VersaTerm is a power telecommunications program. Features include DEC VT100 and VT52 emulation, Tektronix 4014 graphics terminal and Data General D200 emulation. File transfer protocols supported include Xmodem and MacTerminal Xmodem. The MacBinary standard is implemented. Auto redialing and auto logon facilities are included, and users can create a directory of frequently called phone numbers. *VersaTerm* is easy to use and well documented. $99. Peripherals, Supplies & Computers, Inc., 215 Mt. Penn Ave., Perkiomen, PA 19606.

1stPort is a superb data transfer package. It can handle many document formats, including SYLK, DIF, *1stBase* and plain vanilla ASCII. The documentation is clear and precise. The program is also more than adequate as a simple terminal emulator. It supports Xmodem transfers. Another feature is a built-in text editor, making this program easy to use with remote message and electronic mail services. $95. DeskTop Software Corp., 244 Wall St., Princeton, NJ 08540.

DATA FORMATTING

Microsoft Chart is the standard to be matched in presentation graphics programs. Users can easily create area, bar, column, line, pie, scatter and combination charts. A total of 42 styles are provided. Data can be exchanged with other Microsoft products and charts can be pasted into *MacDraw*, *MacPaint* and *MacWrite*. Has on-screen help. Limited to 100 data items (64 in a series) on a 128K Mac, approximately twice that on a 512K Mac. $125. Microsoft Corporation, 10700 Northup Way, Bellevue, WA 98009.

pfs: File/Report provides two programs on one disk. *File* is a reliable, easy to use text database. Use it to design simple forms, maintain records, and, in concert with *Report*, generate reports in list format or as designed forms. This package was an early entry into the Mac marketplace and more powerful and versatile products are now available. $175. Software Publishing Corporation, 1901 Landings Drive, Mountain View, CA 94043.

EDUCATION

ChipWits is a combination game and teaching tool. Players create programs to maneuver robots through a set of eight mazes. The programs are written in *ChipWit*'s built-in icon-based programming language (IBOL). IBOL is a nearly perfect introduction to programming for nonprogrammers. $49.95. BrainPower, Inc., 24009 Ventura Blvd., Calabasas, CA 91302.

MacEdge and **MacEdge II** each contain eight reading or math drill programs for basic skills. Programs follow one of three formats, a bit contrived. Contrivances are design flaws — they require learning format as well as skill. Exception is Alphabet Train, a clever game with great graphics and sound, poor font definition. Average educational value, can be fun to play. $49.95 each. Think Educational Software, 16 Market St., Potsdam, NY 13676.

MacType offers structured typing instruction. Can teach both standard and Dvorak keyboards. Features include certificates for reaching certain levels. Can be used in a multistudent environment. $49.95. Palantir Software, Suite 100, 12777 Jones Rd., Houston, TX 77070.

MasterType is a proof that learning to type can be fun. In this

MINIFINDERS

arcade-style action game words descend from four corners towards the center ship; the user must type them correctly. Features 18 skill levels, tracks errors, recommends lessons and provides comparison scores. $49.95. Scarborough Systems, Inc., 55 South Broadway, Tarrytown, NY 10591.

Mind Prober is a demonstration of a very simple expert-style system. How well do you know your friends? Answer certain statements as either true or false, and the computer prints a 3- to 5-page psychological profile of subject in business, stress, sex and other situations. $50. Human Edge Software Corp., 2445 Faber Place, Palo Alto, CA 94303.

Think Fast allows users to improve their recall and recognition abilities. Tests include compare, copy and recall exercises. Users choose the level of difficulty, speed and risk-taking. Has session and summary reports to provide feedback and permanent records. Good for users of all ages. Children will find it fun. The manual is very clear. $39. BrainPower, Inc., 24009 Ventura Blvd., Calabasas, CA 91302

Turbo Turtle is a turtle graphics program primarily designed as a learning tool for children. It uses Logo commands for graphics, but is not a full implementation of Logo. Commands and common operations are displayed on pull-down menus, executed in a graphics window as they are entered. Procedures can be written and combined for complex designs and recursive operations. Simple to use, good introduction to Logo for young children. $59.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.

ENTERTAINMENT

Airborne is classic arcade-style game with "real' sound effects. The player sits at a gun position on a low rise and defends against an assault from flying enemies. Troops and tanks land and attack across the desert. Game noises digitized from actual recorded sounds add to the game. $34.95. Silicon Beach Software, Suite 201, 11212 Dalby Pl., San Diego, CA 92126.

Balance of Power is the world's first computer peacegame. This astonishing simulation allows players to become either the President of the United States or General Secretary of the Soviet Union. The goal is to expand your country's sphere of influence while avoiding nuclear war. Extraordinary artificial intelligence routines and general play make this game a true classic. Mindscape, Inc., 3444 Dundee Rd., Northbrook, IL 60022.

Baron is the world of real estate in a financial simulation. Buy and option properties in five key areas; invest in industrial, residential or land property; or put cash aside in high-interest accounts. $59.95. Blue Chip Software, 6740 Eton Ave., Canoga Park, CA 91303.

Cutthroats casts players in this full-text adventure as a deep-sea diver, hired by a band of toughs to locate shipwreck treasure. The game is very closed-ended, requiring almost Pavlovian obedience. Multiple endings. $39.95. Infocom, 55 Wheeler St., Cambridge, MA 02138.

Cyborg is a text adventure game with an interesting twist. Robot brain is implanted in concert with yours. It scans, evaluates and reports, then carries out actions. Robot can sometimes be appealed to for extra info. A new source of energy must be found before self-destruct. Energy levels, metabolism, danger signs appear on control panel left of text area. Word and sentence understanding is very good. Absorbing game for adventurers. $39.95. Broderbund, 17 Paul Drive, San Rafael, CA 94903.

Eat New York is a unique Mac database. It is a list of over 700 New York City restaurants. You can search for a place to go by category or location. The minireviews that appear on the screen can be edited (as users will often disagree with them) and new entries added. Indeed, all the New York entries could be deleted and a restuarant database for any locality created. $39. Kaz Business Systems, Suite 1620, 10 Columbus Circle, New York, NY 10019.

Entrepreneur allows up to nine players to compete in the software industry. Make the right decisions early on and the game plays itself. Tiresome at best. $49.95. Microsoft Corporation, 10700 Northup Way, Bellevue, WA 98004.

Feathers and Space is an arcade game. Heavy flapping birds assault you and your troops. Protect your camp via a single spaceship with full lateral movement but a barrier halfway up the screen. Weapons include bullets and bombs. Twisting the mouse rotates turrets on the ship. Death arrives with three ships lost or three troops carried away. Very average game. $34.95. PBI Software, 1155B-H Chess Drive, Foster City, CA 94404.

Felony provides twelve mystery games in a package. One or more players visit various clue sites, deciphering numbered clues with the enclosed booklet. The first one to solve the case wins. $44.95. CBS Software, One Fawcett Place, Greenwich, CT 06836.

Forbidden Quest is a text adventure with pictures. Begins in a spaceship, with you in extreme danger. Indications are that if you don't do something very quickly, you will die a horrible death. The game provides several levels of online help, from simple hints to actual solutions. The disk is accompanied by five graphic prints, called Artext™, of specific scenes with hidden clues. Very playable if a bit mundane. $44.95. Pryority Software, Suite 22, 635 Sanborn Rd., Salinas, CA 93901.

Frogger where Frog meets mouse—and neither side wins. The object is to hop Froggie across a busy highway, then help him jump from log to log to his home at the top of the screen. Free with purchase of Sierra product. Sierra On-Line, 36575 Mudge Ranch Rd., Coarsegold, CA 93614.

Gateway, another Artext™ game, comes with three full-color prints. You inherit a boring old building from a supposedly rich uncle, eventually learning that the building is a "gateway" to a lost civilization. You must find the gateway and cross through. Outcome is determined by choices made along the way. Both *Forbidden Quest* and *Gateway* have pull-down menus for conditions, inventory, and game operations. $49.95. Pryority Software, Suite 22, 635 Sanborn Rd., Salinas, CA 93901.

Gato puts players in command of an American submarine in World War II. This superb simulation game uses all of the Mac's graphic capabilities to really make you feel that "you are there." The game comes with 20 missions and you can create up to ten missions of your own. $39.95. Spectrum Holobyte, Inc.. Suite 325, 1050 Walnut St., Boulder, CO 80302.

Gypsy is a computerized, customizable Ouija board. More than just a software package, users get a pasteboard playing surface and a Mouse Mover with 99 ball bearings. $39.95. Suite 337, Magnum Software, 21115 Devonshire St., Chatsworth, CA 91311.

Legacy is a text/graphic adventure on two disks (Parts One and Two). A magical orb in Drab Castle must be found

$ through the use of spells and careful adventuring. Well-constructed game and fun to play. Two disks needed for ever-present graphics, not a longer game. $39.95. Challenger Software, PO Box 1478, Homewood, IL 60430.

Lode Runner is a 150-screen action-strategy challenge that requires a joystick for truly effective play. Move around a grid of ladders and platforms collecting treasure; dig a hole to trap pursuers. Build your own challenges. $39.95. Broderbund, 17 Paul Drive, San Rafael, CA 94903.

MacAttack puts the player in command of a super tank defending the wastes of Alaska against invaders. This 3D simulation pits you against attacking tanks and warplanes that fire heat-seeking missles. Defeat the horde and get treated to a graphic fireworks display over the town. $49. Miles Computing, Inc., Suite 212, 7136 Haskell Ave., Van Nuys, CA 91406.

MacBackgammon with Cribbage provides graphic versions of these classic games. Variable skill levels allow the user to set game difficulty. At the expert level both games will challenge experts. The graphics are attractive but slow the games down quite a bit. $49. Videx, Inc., 1105 Northeast Circle Blvd., Corvallis, OR 97330.

MacChallenger lets players land a space shuttle at either Cape Kennedy or Edwards AFB. The graphics of this flight simulator are crude and it's a hard machine to fly, but it's also a lot of fun. Version 2.0 lets you record your landing attempt (that's what most of them are!) and then review it from any of ten camera angles, a truly unique touch! $49.95. Aegis Development, Inc., Suite 277, 2210 Wilshire Blvd., Santa Monica, CA 90403.

MacCheckers with Reversi will provide a stiff challenge to experts. You can adjust the degree of difficulty to your taste. The graphics and animations are excellent, although slow. The checkers portion can be very hard to beat when the skill level is set to expert. The reversi (which is very similar to Othello) is somewhat easier, even at the expert level. $49. Videx, Inc., 1105 Northeast Circle Blvd., Corvallis, OR 97330.

MacJack II is a blackjack game pitting users against the house. Includes good graphics, insurance against dealer blackjack, splitting and doubling, and table limit that rises with your stake. The game plays very well, and can be quite addictive. $39.95. DataPak, Suite 401, 14011 Ventura Blvd., Sherman Oaks, CA 91423.

MacPoker looks and plays just like *MacJack II*, one player against the house. This format is not as successful or interesting with poker as it is with blackjack. Dealing and play are slow and few playing options are provided. Game is limited to five-card draw. $39.95. DataPak, Suite 401, 14011 Ventura Blvd., Sherman Oaks, CA 91423.

MacVegas contains seven complete casino-style games: baccarat, blackjack, craps, keno, poker, roulette and slots. All are fairly standard but generally well designed. House rules can be altered by selecting establishment from a menu. The games are all fun to play, but not particularly absorbing. $59. Videx, 1105 Northeast Circle Blvd., Corvalis, OR 97330.

Make Millions is a fascinating business simulation in which the player competes against the computer to take control of five companies, then run them profitably. Different strategic options and human-seeming associates make simulation more complete. Appeals to the closet capitalist in all of us. $49.95. Scarborough Systems, Inc., 55 South Broadway, Tarrytown, NY 10591.

Millionaire is a financial simulation based on the stock market. "News" affects stock prices, so read it religiously. Turn a pittance into a fortune to win the game. $49.95. Blue Chip Software, 6740 Eton Ave., Canoga Park, CA 91303.

Mouse Stampede is an infectious *Centipede*-like game with mice, bats, cheese (normal and moldy), turtles, flies, paint brushes, knives, shopping carts and sneakers on the attack. Activated cats will gobble mice until full. Game is fast-paced, high scoring and generally fun to play. $39.95. Mark of the Unicorn, 222 Third St., Cambridge, MA 02142.

NewGammon is animated backgammon that will challenge even good players. Features include variable skill levels and strategies and options to play the Mac or watch the Mac play itself. Many positions are included so that you can learn how to play them without having to set up a whole game. An arcade-like high speed play mode is also included. This is the best backgammon player currently available. $39.95. Newsoft, PO Box 4035, Newport Beach, CA 92661.

Pensate is a truly mind challenging strategy game. The object is to move a piece eight squares while avoiding contact with lots of other pieces that are moving in various patterns. There are multiple levels of difficulty and a play-ahead feature where users must plan moves in groups of up to four turns. The graphics are very well handled and the challenge addicting. $39.95. Penguin Software, 830 Fourth Ave., Geneva, IL 60134.

Planetfall leaves users shipwrecked on a seemingly deserted planet, with only Floyd the Droid to help figure out how to get home. Two possible endings. This full-text game is written in a tongue-in-cheek style. $39.95. Infocom, 55 Wheeler St., Cambridge, MA 02138.

Pyramids of Peril is an action-strategy adventure in which a single explorer must unravel the mysteries of the pyramid. Computer maps automatically; combat is engaged in with the mouse. $39.95. Aegis Development, Suite 277, 2210 Wilshire Blvd., Santa Monica, CA 90403.

Real Poker is five-card draw against five other players with Old West names, distinct personalities and playing styles, in a saloon setting. Game has three playing speeds. Dealing and play are very fast. Betting and play options shown on buttons. Game evaluates your hand, suggests cards to keep/discard. These features also accelerate play. Dynamic, exciting, addictive game. $39.95. Henderson Associates, #1, 980 Henderson Ave., Sunnyvale, CA 94086.

Sargon III is a capable chess program with 9 levels of play, problem-solving modes, take back, change color, hint, manual play, etc. Easy Play option blocks *Sargon* from stealing search time during player's move, effectively doubling number of levels. Pieces are moved graphically. Disk stores 107 classic games for review and replay. $49.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.

Squire is a financial simulation that features a unique, real-life mode that lets you set your own financial goals, then play out your strategy using IRAs, stocks, commodities, collectibles and property. $69.95. Blue Chip Software, 6740 Eton Ave., Canoga Park, CA 91303.

Trivia has questions in Sports, History, Geography, Literature and Entertainment categories, on-line instructions and

MINIFINDERS

playing options. Up to six players compete. Players set time of response, target score for win. Player answers question verbally from one of three levels, checks answer, then hits *Correct* or *Incorrect* button. Categories limited, questions replay if game not saved. Own questions can be converted from *Word* or *MacWrite* files. $24.95. Mirage Concepts, 108, 4055 W. Shaw, Fresno, CA 93711.

Tycoon is a financial simulation based on the ups and downs of commodities market. Build a fortune in pork bellies and Swiss francs, checking the "Financial Journal" for news affecting the market. $59.95. Blue Chip Software, 6740 Eton Ave., Canoga Park, CA 91303.

Ultima II lets players take the part of a character who travels through land, sea, air, space, and even time itself in a quest to find and defeat the evil sorceress Minax. Good Mac interface; excellent game in spite of confusing graphics. $59.95. Sierra On-Line, 36575 Mudge Ranch Rd., Coarsegold, CA 93614.

Ultima III allows up to four characters to cooperate to explore the vast wilderness of Sosaria; dungeons, oceans, and the Moon Gates help solve the adventure. Outstanding translation of the Apple II smash hit. $59.95. Origin Systems, 340 Harvey Rd., Manchester, NH 03103.

Webster's Revenge is a *Boggle*-like word search game. Super graphics make it a pleasure to play. The dictionary is adequate and the user can always overrule it if necessary. Multiple skills levels make this a game for all. $34.95. Shapechanger Software, Inc., 113 E. Tyler, Athens, TX 75751.

Who's Grandma's Baby? "Grandma" has just inherited a fortune in medieval jewels and has escaped from her native Hungary past the watchful eyes of the KGB. Grandma has only one living relative, but awaiting her at JFK airport are a bevy of imposter grandchildren. You must compare bone structure, speech patterns and ask pertinent questions to find the real grandchild. $49. BulTech, Inc., 7130 Barcadero Road, Fort Worth, TX 76109.

The Witness is a full-text adventure casts the player as a detective assigned to get to the bottom of a death threat. When the victim is killed, you have only one night to find the real guilty party. $39.95. Infocom, 55 Wheeler St., Cambridge, MA 02138.

Wizardry is an outstanding dungeon exploration adventure pitting a party of up to six characters against the guardian monsters of the evil wizard Werdna. Capture his amulet to earn your reward. Even after solving the game, you'll want to go back into the dungeon. $59.95. Sir-Tech Software, 6 Main St., Ogdensburg, NY 13669.

Word Challenge is a *Boggle* lookalike. Features multiple (26) skill levels and an extensive dictionary. Even "pro" *Boggle* players should find a level that will challenge them. The game plays well. $39.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.

Xyphus is a role-playing game pitting four characters (fighters or wizards) against multiple scenarios that grow increasingly harder. Excellent Mac interface and icon control. $39.95. Penguin Software, 830 Fourth Ave., Geneva, IL 60134.

Zork I is a full-text adventure game that lets players explore a strange underground empire. Parser understands full sentences; players can take many different routes to final success. Beware of the thief, who steals random objects. The ultimate text game. $39.95. Infocom, 55 Wheeler St., Cambridge, MA 02138.

Zork II is where the adventure continues in the underground empire. A wandering wizard keeps things interesting, though there's a way to beat him if you persevere. $44.95. Infocom, 55 Wheeler St., Cambridge, MA 02138.

Zork III is the final chapter in the trilogy. Players come up against the ultimate enemy — the Dungeonmaster himself. More closed-ended than previous *Zorks*. $44.95. Infocom, 55 Wheeler St., Cambridge, MA 02138.

GRAPHICS & DESIGN

Animation Toolkit I lets users prepare "film clips" of moving objects which play back at varying speed, like old-fashioned flip books. Drawings are built in frames, using some of the tools from *MacPaint*. They can be copied and altered easily from frame to frame. Each film clip plays repetitiously as it is being constructed. A limited animation tool, but a lot of fun. $49.95. Ann Arbor Softworks, 308½ S. State St., Ann Arbor, MI 48104.

Art Grabber with Body Shop is a desk accessory that lets users browse *MacPaint* documents, selecting and copying as they chose. Selections can be larger than screen size. Also included are *MacPaint* documents and templates to allow the creation of people in your art. $49.95. Hayden Software, 600 Suffolk St., Lowell, MA 01853.

ClickArt Special Effects is a *MacPaint* enhancement desk accessory. Allows the user to distort, stretch, rotate and use perspective on *MacPaint* documents. A necessary addition for all serious users of *MacPaint*. $49.95. T/Maker Company, 2115 Landings Drive, Mountain View, CA 94043.

DaVinci Building Blocks features predrawn blocks of brownstone, garden and skyscraper portions that can be cut and pasted together to form landscape and architectural drawings. Fun for even non-pro's. $79.95. Hayden Software, 600 Suffolk St., Lowell, MA 01853.

DaVinci Commercial Interiors is a professional-level package of layout aids for interior designers and architects. Features predrawn office sections with furnishings included as a font that the user installs into a System file. $199.95. Hayden Software, 600 Suffolk St., Lowell, MA 01853.

Fontastic is the best font editor now available for the Mac. Features a large editing window with a grid to make positioning easy. Select letters to edit by clicking on a matrix of the font. Allows scaling of existing fonts and previewing the various styles (italic, bold, shadow, underline and outline). $49.95. Altsys Corp., PO Box 865410, Plano, TX 75086.

Icon Switcher changes icons for applications and the documents they generate, permitting you to customize icons for personal work. New icons can be built pixel by pixel in the program or created in *MacPaint* and pasted in. Generally easy to use. $19.95. PBI Software, 1155B-H Chess Drive, Foster City, CA 94404.

Mac the Knife/Vol. 1: Treasury contains over 500 pieces of clip art in the form of *MacPaint* documents and two new fonts. The art is well organized and mostly high quality. The rulers, for on screen measurement, and the disk label templates are particularly useful. If you only plan on getting one clip art disk this would be a good choice. $39. Miles Computing, Inc., Suite 212, 7136 Haskell Ave., Van Nuys, CA 91406.

MacUser

COMING NEXT ISSUE



THE MAC GETS DOWN TO BUSINESS!

—A step by step guide to designing power macros in *Excel*;

—Accounting on the Mac—a comparative review of nearly a dozen major products;

—*MacCharlie*—Is it a sin to run MS DOS on a Macintosh? (and how well does it work?)

Plus:



Short reviews of *StatView*, *Start Your Own Business*, *MacPlot*, and more;
And a roundup of desk accessories designed to help you organize the way you work—*Sidekick*, *Battery Pak*, and *QuickSet*;

In Other Areas of Interest:

—The gloves come off as four experts compare the merits of programming in Pascal, BASIC, Forth, and C in our Great Language Face-Off;



—We review *JustText*, a professional word/graphics processor for interfacing with PostScript printers and typesetters;

—Neil Shapiro offers a step-by-step guide to Getting Started in Telecommunications;

Plus:
—Serious literary entertainment with Text Adventures;
—The Mac musician takes an in-depth look at MIDI on the Mac;
—Our BASIC series continues with Part II of a Dip into the ROM;
—MUGS: The *MacUser* Guide to Mac User Groups;
—Over 150 capsule product reviews;

And, as always,
—The Macintosh Boundary from Doug Clapp;
—Dan Cochran with Answers from the Mac Team; and
—More irreverence from our contributing anti-editor, John Dvorak

MINIFINDERS

Mac the Knife/Vol. 2: Fonts contains over two dozen new fonts. Some of these (Paris and Stuttgart, for example) are real stunners. If you do a lot of word processing try Paris 9 point (it's a big 9 point) as your text face and use High quality printing. Some fonts have single key fractions (½, ¼). $49. Miles Computing, Inc., Suite 212, 7136 Haskell Ave., Van Nuys, CA 91406.

Maccessories Professional Type Fonts comes in two flavors: text and headline. Both sets consist of 16 digitized fonts, very similar to commercial typefaces. These extremely clean fonts are among the best available. The Text set comes in sizes ranging from 12 point to 24 point, while the Headline fonts are from 24 point to 72 point. The large fonts have to be seen to be believed; they're really good. Some of the very large (48 and 72 point) fonts will only work a 512K Mac (they take up lots of memory!). $49.95 Text (1 disk). $69.95 Headlines (2 disks). Kensington Microware, 251 Park Ave. South, New York, NY 10010.

MacDraft is the step beyond *MacDraw*. This object-oriented drafting program is packed with advanced features such as rotation, zooming, auto dimensioning and scales. A professional level product. $239. Innovative Data Design, Inc., Suite 8, 1975 Willow Pass Rd., Concord, CA 94520.

MacDraw is an object-oriented structured graphics program. Can be used to design forms, create presentation materials and do technical illustrations. Drawing sizes up to 8 feet by 10 feet are possible. Text can be easily generated and integrated in the graphics. *MacPaint* documents can be pasted into *MacDraw* documents, but not manipulated. $195. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014.

MacPaint is the graphics program that started a whole new genre. Still the best freehand graphics tool. Version 1.5 supports 512K Macs and the LaserWriter. Multiple tools, patterns and features too numerous to describe. A work of art for artists. Comes with Macs. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014.

MacPublisher is a tool for creating newsletters. Allows multiple page issues. Layout is fairly easy but hard to do precisely. Text must be entered via the keyboard, a serious drawback, and style and font changing ability is limited. Runs on a 128K Mac but is slow; a 512K should be considered a requirement. Printer support, including LaserWriter, is good. Ideal for informal newsletters, not yet a professional tool. $99.95. Boston Software Publishers, Inc., 19 Ledge Hill Rd., Boston, MA 02132.

PageMaker is an advanced layout and makeup program. Can easily create multiple page documents. Output is optimized for LaserWriter. Good documentation. $495. Aldus Corporation, Suite 400, 616 First Ave., Seattle, WA 98104.

QuickPaint is a desk accessory that allows browsing through *MacPaint* documents. Selected portions of documents can be expanded to fill the screen. Disk also includes a wealth of very high-quality clip art. $49.95. EnterSet, Inc., Suite 408, 410 Townsend St., San Francisco, CA 94107.

ReadySetGo is a page makeup program for 512K Macs. Users build up pages from blocks of text, graphics and rules. Resizing and scaling of blocks are supported. Each block can be precisely positioned. Text and art may be pasted in from another source or created within the program. Good LaserWriter support. $125. Manhattan Graphics, 163 Varick St., New York, NY 10013.

Slide Show Magician lets users easily design and show their own text and art presentations in the form of a "slide show." The program accepts documents created in *MacWrite* and *MacPaint*, plus any clip-art style graphics helpers. Movielike special effects options include wipes, barn doors, venetian blinds, and fades. An option lets users install working buttons on the screen. $59.95. Magnum Software, Suite 337, 21115 Devonshire St., Chatsworth, CA 91311.

TalkShow allows pictures, graphics, and speech to be combined in a single document. Unfortunately the components are so crude and the integration and implementation so poor that the program is of no value except as a curiosity. The skimpy documents do not begin to explain the program. $149. Rune Software, Suite 214, 80 Eureka Square, Pacifica, CA 94044.

Underware Ribbon allows users to create *MacPaint* images and transfer them to cloth, typically to t-shirts. Fairly easy to do, although care is required. The transferred images can be colored using the special pens provided. Set of a ribbon and five colored pens, $24.95. Underware Diversions, Inc., 1550 Winding Way, Belmont, CA 94002.

VideoWorks is a full-featured animation package. Professional quality animations are easily accomplished using the tools provided. Features frame-by-frame and real-time modes. Comes with an art disk of predrawn images and *Art Grabber* (which allows the user to use any part of a *MacPaint* document in *VideoWorks*). Includes many special video and sound effects, excellent manual and many on-disk examples. $99.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.

ACCOUNTING

Rags to Riches small-business accounting has three integrated modules: General Ledger, Receivables and Payables. Each can handle 5000 accounts and 10,000 transactions. Runs on single drive, 128K but 512K or more, two drives advisable. Simple to use, effective use of menus, windows, and mouse operations. RAM-based, *R to R* includes context-sensitive help and supports LaserWriter, AppleTalk, all third party hard disks. Brilliant in operation, documentation and design. $199.95 each. Chang Labs, 5300 Stevens Creek Blvd., San Jose, CA 95129.

Palantir Financial Series consists of three modules that will handle the accounting needs of a moderate-sized business. Good, powerful programs. Good documentation. Main drawback is that all require *MS BASIC* to run. $145 each. Palantir Software, Suite 100, 12777 Jones Rd., Houston, TX 77070.

HOME APPLICATIONS

Day Keeper Calendar is the ultimate computerized appointment and note book, the *Day Runner* of computers. Holds a year's worth of information in each calendar document (you can have several). Starting from the basic display of a whole month you can easily see details of days and individual entries of many sorts. If you need a computerized appointment book this is it. $39.95. Dreams of the Phoenix, Inc., PO Box 10273, Jacksonville, FL 32247.

Dollars & Sense is a bookkeeping program suitable for personal, home and small-business use. Easy to use, with a good manual and excellent on-screen help. Will handle up to 120 separate accounts or money categories. Uses standard double-entry accounting techniques. Seven kinds of reports can be generated and either viewed on-screen or printed. Simple graphing and charting facilities are included. $149.95. Monogram, 8295 S. La Cienega Blvd., Inglewood, CA 90301.

Electric Checkbook does exactly what the name says: keeps a run-

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MacFee *simplifies goods & services accounting, providing unlimited billing rates and prices for goods. It issues statements, tracks invoices, flags credit limits, ages receivables, and maintains mailing lists. 300.*

MacFinance *handles sophisticated financial calculations, leaving you free to use your intuitive faculties rather than your memory for equations. It will even create charts and graphs based on your data. 99.95.*

MacStore *automates your retail business. It updates all files with each transaction, keeping accurate records of cash flow, price quotes, sales tax, sales inventory, receivables, etc. 450.*

MacWholesaler *eliminates tedium and margin for error in your daily operation. It records sales, cash flow, credit lines, inventory, backorders, price lists and quotes, sales tax, receivables, and supports 10 pricing levels. 800.*

SalesMac *turns your Mac into your star assistant, and you into a sales star. It remembers your appointments and contacts, reminds you when to call, tracks expenses, and lets you chart your progress with a choice of graphs. 150.*

The Video Store *tracks sales, rentals, and inventory at point-of-sale. It handles 30,000 items on 10Mb hard disk, and will generate reports including mailing list, inventory value, statements, and overdue rentals by customer. 800.*

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MINIFINDERS

ning account of checkbook transactions, balances checkbook to bank statements, tracks bills, and even prints out checks, if you wish. Electric checkbook provides detailed financial statements, calculates net worth, lists expenses by category, and tracks your personal cash flow. A good, full-featured program. $79.95. State of the Art, 3191-C Airport Loop, Costa Mesa, CA 92626.

Financial Cookbook provides nearly 3 dozen "recipes" to help users figure out financial formulas (e.g., mortgage costs at different percentage rates) by inputting pertinent data. Very user-friendly. $44.95. Electronic Arts, 2755 Campus Drive, San Mateo, CA 94403.

Financial Utilities Pack is a set of applications that allow users to figure annuities, compound and simple interest, depreciation and amortization. Simple and well documented. $69. Cognitive Software, PO Box 26948, Austin, TX 78755.

Forecast is a tax estimating and what-if program designed to work with and use *Dollars & Sense* files. Straightforward, easy to use program. $69.95. Monogram, 8295 S. La Cienega Blvd., Inglewood, CA 90301.

Front Desk lets small businesses and offices easily keep track of personnel schedules, activities, and payments. The program can keep track of up to 15 employees, functioning as a day-, week- and month-at-a-glance calendar. Highly recommended for doctors and dentists' offices. Less useful for offices less dependent on the human factor. $149.95. Layered, Inc., 85 Merrimac St., Boston, MA 02114.

The Home Accountant is a complete and easy to use financial system. Data entry is intuitive. All kinds of reports, including charts and checks, are easily generated. Entered data will update all relevant material. $150. Arrays, 11223 South Hindry Ave., Los Angeles, CA 90045.

The Housekeeper is a home inventory database. Users can keep track of assets for both tax and casualty purposes. Specialized reports are easily generated. $99.95. Aegis Development, Inc., Suite 277, 2210 Wilshire Blvd., Santa Monica, CA 90403.

I Know It's Here Somewhere stores information in a simple card filing system. Ideal for hobbyists and collectors, general household or small business use. File formats are flexible and 31 samples are included. Program can cut and paste between files; display and cross reference up to five files at a time; perform simple, wild card or multiple key searches, and print selected items or whole files. $59.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.

MacOffix combines of many of the simple and necessary office functions in one easy-to-use package. Features include simple word processing, forms design, form letter production, report generation and filing. Good design nearly makes the manual unnecessary. $149. Emerging Technology Consultants, Inc., 1877 Broadway, Boulder, CO 80302.

MacMuscle is a fitness program that lets users generate weekly workout schedules. Features include a detailed chart of the body and its 24 major muscle groups. An animated figure demonstrates the primary exercises. Calculates training pulse rate, which is shown by an animated heart and sound. Limited program that emphasizes weight training. $89.95. Tech 2000 Software, Inc., 263 Lugonia St., Newport Beach, CA 92663.

My Office lets you handle your files and papers in much the same way that you did before you got a computer. Now your folders and files are all in the computer and you can easily find anything, print anything or even print everything. Excellent use of graphic symbols makes this program the easiest to use of its type. $129.95. DataPak Software, Suite 401, 14011 Ventura Blvd., Sherman Oaks, CA 91423.

SmoothTalker trains your Mac to say anything you want. Users can program the pitch and tone of each syllable to simulate true speech patterns. Not too useful — but a lot of fun to play with! Latest version includes a female voice. Male and female can be mixed in same document to provide entertainment. $149.95. First Byte Software, 2845 Temple Ave., Long Beach, CA 90806.

The Desk Organizer is a free-form desk management system based on index card-style files. Has many features including alarms, report generation and calculation. The Meta feature lets the program run along with another application. $99. Conceptual Instruments, 269 W. Walnut Lane, Philadelphia, PA 19144.

NUMBER CRUNCHING

BEAMAC II is for civil engineers. It performs full graphic and numeric analyses of any statically determinate or indeterminate beam. Simple to use, good use of the Mac interface. Money-back guarantee. $295. Erez Anzel, 5T, 5800 Arlington Ave., Riverdale, NY 10471.

ClickOn Worksheet is a 50-row by 20-column spreadsheet that loads onto any system disk as a desk accessory. Though small in size, it has remarkable capabilities for a desk accessory. It produces line, bar and pie charts and changes in the worksheet automatically reflect in charts. Especially useful while working in a word processor. $79.95. T/Maker Company, 2115 Landings Drive, Mountain View, CA 94043.

Multiplan, the first Mac product from someone other than Apple, is beginning to show age. Still a very capable basic spreadsheet with simple sorting, 63 columns by 255 rows, many built-in functions, other standard spreadsheet features. Design conforms well to Mac philosophy, with most functions menu or mouse controlled. *Multiplan*'s best feature is the ability to link areas of one worksheet to portions of another, in *Multiplan* or *Chart*. $199.95. Microsoft, 10700 Northup Way, Bellevue, WA 98004.

StatView is the statistician's dream tool. Excellent use of the Mac interface combined with a super manual make any sort of statistical analysis a breeze. Handles numerous techniques and tests. BrainPower, Inc., 24009 Ventura Blvd., Calabasas, CA 91302.

WORD & OUTLINE PROCESSORS

Express contains word processing, mail list and mail merge applications in a single product. Also makes Mac an electronic memory typewriter! A converted PC product that looks as though it were running on a PC. Compromises made in interface to provide features, sufficient text area on 128K Macs. 512K version will be more Maclike. Quick and dirty letter processor that works. $29.95. Mirage Concepts, 108, 4055 W. Shaw, Fresno, CA 93711.

1stMerge is a mail-merge program that integrates data files with documents after a blueprint for documents has been designed. Features on-screen help, and the ability to add and search records. Requires *MacWrite*. Good for mass mailings, including envelopes and labels. $95. DeskTop Software Corp., 244 Wall St., Princeton, NJ 08540.

Hayden: Speller checks spelling errors in *MacWrite* and *Word*

documents against a dictionary of 20,000 common words and user-created dictionary. Suspect words appear minifinder style, with changes made in simple dialog boxes. Corrections are typed in or selected from a list generated by the dictionary. Reasonably fast and quite simple to use. Dictionary is small and words cannot be viewed in context while correcting. $79.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.

Just Text is a professional level word processor and page makeup program that generates PostScript output. Comes with a set of LaserWriter utilities that allow total manipulation of art and text. Requires LaserWriter or other PostScript compatible output device. $195. Knowledge Engineering, GPO Box 2139, New York, NY 10116.

MacProject allows a user to plan and track a project from begi n-ning to end. Uses CPM to produce schedules with start and finish dates for each task. Can report on resource interdependencies and generate all needed printed reports. Has a very clear manual. $125. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014.

MacSpellRight is a spelling checker that works with *MacWrite* 4.5 (not 2.2!). Allows the user to create create custom dictionaries. Works from within *MacWrite*. $89. Assimilation, Inc., 485 Alberto Way, Los Gatos, CA 95030.

MacWrite is the basic word processor that comes with the Mac. While it doesn't have every bell and whistle, it is more than adequate for most users. Features of the current version (4.5) include document size limited by disk space, global search and replace, page numbers indicated in the scroll bar and excellent LaserWriter compatability. Easy to use and well documented. Free, except for consortium students. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014.

Microsoft Word is THE power word processor for the Mac. It has just about every feature your heart could desire. Supports keyboard commands as well as the mouse. Does mail merge and multicolumn text. And it's easy to use. Integrates with the rest of the Microsoft line. $195. Microsoft Corporation, 10700 Northup Way, Bellevue, WA 98009.

QuickWord is a word processing accessory that adds sophisticated glossaries to *MacWrite*. Simple to install and use, yet powerful and efficient. $49.95. EnterSet, Inc., Suite 408, 410 Townsend St., San Francisco, CA 94107.

ThinkTank 128 is the first of a new type of program known as an outline processor. Lets the user create complex outlines and revise them using moves, cuts and pastes. The interface is not the standard Mac interface but is simple to use and efficient. The program is speedy. Printer support is limited, but files can be printed in a draft-style mode. Only for 128K owners; 512K owners should get *ThinkTank 512* which has many more features and is more useful than the price differential would indicate. $145. Living VideoText, Inc., 2432 Charleston Rd., Mountain View, CA 94043.

ThinkTank 512 is a word/outline processor. It is a very fast and intuitive organizational tool that can handle word processing chores in the midst of structuring a plan or outline. Full keyboard control (without mouse) is possible. Can store and paste graphics into outlines. Slide show features allows high quality presentations to be created. Good report formatting and printing capability. $245. Living VideoText, Inc., 2432 Charleston Rd., Mountain View, CA 94043.

DATABASES

Consultant is a program that lets users organize ideas and helps in thinking through and solving problems. Easy to use thanks to extensive use of icons and on-screen help. This program introduces some low-level AI (artificial intelligence) concepts. $200. Organization Development Software, Inc., 1605 S. Garden St., Palantine, IL 60067.

FactFinder is a freeform information organizer or medium-duty database. Users enter data on to factsheets in any manner desired and select keywords. Factsheets are associated in groups called stacks. Searches are by name or keyword. The speed is barely adequate and only one factsheet can be open at a time. Printing and cutting and pasting between factsheets are supported. Has a good manual, on-screen help and on-disk tutorial. Publisher offers free telephone support (800 number). $149.95. Forethought, Inc., 1973 Landings Drive, Mountain View, CA 94943.

FileMaker is a nonrelational database that combines lots of power with ease of use. Data entry is extremely flexible and all items in all fields are indexed so that multiple criteria searches are both simple and fast. Calculation fields make the creation of invoices and similar documents a snap. Reports can include graphics and multiple data layouts are easy to construct. $195. Forethought, Inc., 1973 Landings Drive, Mountain View, CA 94943.

FileVision is a simple database that can change the way you think about data and data organization. Records are based around user created graphics screens. Screens and records can be linked in complex ways. $195. Telos Software Products, 3420 Ocean Park Boulevard, Santa Monica, CA 90405.

1stBase is a small, easy use to use database that allows users to join or append files. It is the simplest, most accessible relational database available for the Mac. Supports calculated fields including statistical summaries such as averages. Integrates with *1stMerge* and *1stPort*. $195. DeskTop Software, 244 Wall St., Princeton, NJ 08540.

Habadex is a telephone directory/database with some list, label and mail merge capabilities. Extreme ease of use is cancelled by the impossibility of selectively removing old data. That situation is aggravated by the extremely limited file size. An accessory ($50) allows actual telephone dialing. $99.95. Haba Systems, Inc., 15154 Stagg St., Van Nuys, CA 91405.

Helix is a relational database that makes extensive use of icons. Excels in database setup and forms generation. Setup is made easy by the adherance to the Mac interface. The manual is clear, thorough and well-indexed. Too complicated for most simple database applications, excellent where relational database application is required. Supports multiple windows. Requires a 512K Mac and an external drive, but is slow on that configuration. The recommended hard disk is really required to use *Helix* effectively. $395. Odesta, 3186 Doolittle Drive, Northbrook, IL 60062.

LaserBase is versatile database that allows full integration of graphics in its records. Files can have multiple levels of password security. Good use of the Mac interface. $149.95. Kette Group, 13895 Industrial Park Blvd., Minneapolis, MN 55441.

MacLion is a true relational database program. Can handle all databasing requirements although set up may require outside (consultant) help. Has a built-in programming

MINIFINDERS

language (LEO) and can be customized for any application. Reasonably flexible and easy to use once a database is set up. Can handle very large files as well as multiple files. $379. Computer Software Design, Inc., 1904 Wright Circle, Anaheim, CA 92806.

Microsoft File is a flexible data manager. Creates files for variety of data, including simple graphics. Files created in simple row/column format, but reports, forms easily customized by moving field names around on a blank form. Sorting limited to approximately 5000 records on 128K Mac, much more on 512. Easy to use, well designed and full featured. $195. Microsoft, Corporation, 10700 Northup Way, Bellevue, WA 98004.

Omnis 3 is a power database, featuring concurrent multiple file management. Can handle 24 files, 12 at a time, and is fully relational. Allows user to create custom environments including user-defined menus, commands, and dialogs. Good report generation capability. Comes in single and multiple user versions. $495 (single user version). Organizational Software Corporation, 2655 Campus Drive, Suite 150, San Mateo, CA 94403.

INTEGRATED SOFTWARE

Crunch is an icon-driven relational spreadsheet that features versatile charting and database capabilities. Strong financial logic, date, and mathematical functions. Spreadsheets can be linked. The manual is clear and concisely written. Macros are not supported. $195. Paladin Software Corporation, 2895 Zanker Rd., San Jose, CA 95134.

Ensemble lets you create a database of words, pictures, and/or numbers; graph data; generate custom forms and link files for applications such as mail merge. Can perform calculations and math functions on data. *Ensemble* is compatible with *MacWrite* and *MacPaint* files, and any program using cut and paste operations. Capacity limited by RAM and disk size. Easy to use, light general database with graphics. $299.95. Hayden Software Corporation, 600 Suffolk St., Lowell, MA 01854.

Excel is THE power spreadsheet. Of the Mac, of the world. Has 256-column by 16,384-row capability. Features include a powerful easy to use macro function (with a recorder to make creation simple) and elaborate charting facilities. Can link multiple spreadsheets. 512K Mac and external drive required. $395. Microsoft Corporation, 10700 Northup Way, Bellevue, WA 98009.

Jazz provides extremely well integrated modules for word processing, graphs, worksheets, databases and communications. Each of the modules is substantial and the worksheet is packed with powerful functions. The truly exceptional feature is HotView, where data placed in any module automatically updates all other documents that use that data. *Jazz* provides adequate coverage of most data and communications needs of small businesses. Requires 512K *and* external Drive. $595. Lotus Development Corp., 55 Cambridge Parkway, Cambridge, MA 02142.

OverVUE is a power-packed relational database that has extensive sorting, summarizing and report generation capacity. Has macros and a charting function. Good manual. The program tries to anticipate every need conceivable in manipulating data. It can exchange files with a very wide variety of other programs (including IBM software). Be sure to get version 2.0. $295. ProVUE Development Corp., 222 22nd St., Huntington Beach, CA 92648.

Quartet, an integrated program that works on a 128K Mac, is built around a powerful spreadsheet with a full range of functions. It can also be used as a database and provides good quality charts from spreadsheet data. Documentation is adequate but not too well organized. $199. Haba Systems, Inc., 15154 Stagg St., Van Nuys, CA 91405.

UTILITIES

Accessory Pak 1 is a group of useful applications and utilities. *Paint Cutter* alone is worth the price. That program allows users to browse and manipulate full page *MacPaint* documents. $39.95. Silicon Beach Software, Suite 201, 11212 Dalby Pl., San Diego, CA 92126.

Battery Pak is a set of eight handy desk accessories including scientific and RPN calculators, a background text file printer, a 250-page note pad with search and phone dialing capabilities, a disk file utility, an accessory to launch another application without returning to the desktop and a calendar with notekeeping and search capabilities. Comes with an installer and the best manual we've seen in a long time. $49.95. Batteries Included, 30 Mural St., Richmond Hill, Ontario, L4B 1B5, Canada.

Copy II Mac was one of the first back-up programs available for the Mac. Does efficient sector and bit copies and in its latest version (4.1) can back up virtually all Mac software. Features graphic displays of copy progress. Comes with *MacTools*, a multiuse utility that can recover many damaged files. $39.95.Central Point Software, Inc., Suite 100, 9700 S.W. Capitol Highway, Suite 100, Portland, OR 97219.

ExperLISP is a very buggy, but still incredibly useful, programming language for high-level programmers. The more you use it, the more you'll figure out about it. System crashes are too common for a language this useful and expensive. $495. Requires 512K and either an external or a hard drive. ExperTelligence, Inc., 559 San Ysidro Rd., Santa Barbara, CA 93108.

ExperLogo is a version of the popular teaching language, Logo. Features three-dimensional graphics using "bunnies" rather than the usual "turtles." Very speedy, smooth program. Comes with an excellent manual. $149.95. ExperTelligence, Inc., 559 San Ysidro Rd., Santa Barbara, CA 93108.

Lock-It allows users password control of all their documents. It works quickly and efficiently to protect confidential material. Unfortunately, it is not perfectly bug free and a failure will cause future lack of access to data. If you absolutely need to protect data and are very careful, you can use *Lock-It*, but the average user should stand clear. $29. Assimilation, Inc., 485 Alberto Way, Los Gatos, CA 95030.

Mac Memory Disk creates a RAMdisk on 512K Macs. The RAMdisk's size is user selected up to 316K. Has auto startup and auto file transfer features. Simple to use, on-screen dialogs prompt for all actions. $29. Assimilation, Inc., 485 Alberto Way, Los Gatos, CA 95030.

Mac•Tracks allows users to store a series of keystroke and mouse movement operations to any command key. The various controls and index (so that you can see what you already created) reside in the Apple menu as a desk accessory. Documentation is inadequate and behavior is sometimes not what you expect. Invaluable in some places (*SmartCom II* and *Jazz*), it needs some improvement before it gets much use. $29. Assimilation, Inc., 485 Alberto Way, Los Gatos, CA 95030.

MacAsm is a software development system that allows programs to be written in assembly language. Programmers can

assemble, edit and test software, and an integrated resource compiler lets independent applications run from their own icons. $125. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301.

MacBooster is a disk-caching program that adds a great deal of operating speed to a 512K Mac. It installs easily from its master disk. This program can increase the speed of your 512K Mac by 2 to 5 times. $50. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301.

MacForth is an implementation of the popular FORTH programming language. Level 1 is a simple, introductory version with limited support of the Mac ToolBox. Excellent tutorial and reference sections in the manual. Level 2 supports the Mac Toolbox fully. Level 3 extends the language so that professionals can produce standalone applications. All levels are supported by the publisher via telephone and electronic BBSs (the publisher even has a private SIG on CompuServe). $149 (Level 1), $249 (Level 2), $499 (Level 3). Creative Solutions, Suite 12, 4701 Randolph Rd., Rockville, MD 20852.

MacLabeler lets users instantly index and print labels for all the disks in a burgeoning collection. Choose border type and orientation of your label; index by folder or document. Starter set of labels is included. $49.95. Ideaform, Inc., PO Box 1540, Fairfield, IA 52556.

MacMate! combines RAMdisk and print spooling functions in a compact package. Both parts are efficient, work well and have on-screen help. This is the best product in its category. $49.95. SMB Development Associates, PO Box 3082, Chatsworth, CA 91311. [NEW]

Macintosh Pascal is Apple Computer's version of this very popular programming language. Loaded as it is with innovative teaching features, this interpreter is an excellent introduction to Pascal. Superb usage of the whole Mac interface makes this the best way to learn Pascal. The documents are mostly references so be sure to get one of the tutorial textbooks in your bookstore. $125. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014.

Macintosh 68000 Development System is a fairly traditional assembly language package. The two-disk set provides an excellent editor (*Edit*), an efficient assembler, a linker, an executive and a resource compiler called *RMaker*. The files included in this two-disk set have all the basic equates, process definitions, and trap calls. Good documentation includes a copy of the Motorola 68000 handbook. Also included is a copy of the "phonebook" edition of *Inside Macintosh*. $195. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014.

MacNosy is a global disassembler. A very advanced user can use this program to look into the code of virtually any program. This advanced tool can take you places no other Mac program could dream of going IF you have the skill to guide it. The documentation is sparse. For pro's only. $70. Jasik Designs, 343 Trenton Way, Menlo Park, CA 94025.

MacZap is a three-part disk and memory utility. It can be used to recover some damaged files and disks, compare disks, analyze disk structure and make back-up copies of most disks. Fairly intimidating due to it enormous power. Has a good manual. $75. Micro Analyst, Inc., 5802B Gloucester, Austin, TX 78723.

MS BASIC was the Mac's first programming language. It has come a long way since its infamous version 1.00. The current version (2.0) of this interpreter (it's not a compiler) now supports the ToolBox and the whole Mac interface can be implemented in your programs. For you nonprogrammers there are lots of programs available (in user group libraries and magazines) to run. Easy to use. There have been several versions; be sure you get version 2.0 or higher. $150. Microsoft Corporation, 10700 Northup Way, Bellevue, WA 98009.

MS Logo, from Microsoft's MacLibrary, written by LCSI. An excellent implementation of Logo, taking full advantage of the Mac's user interface. Uses three windows: *text* along the bottom, for commands and actions; *program*, for defining procedures, and *graphics* for program execution. Turtle looks like a turtle, and its screen actions are very precise. Windows can be resized, removed, and moved about. $124.95. Microsoft Corporation, 10700 Northup Way, Bellevue, WA 98004.

Quick & Dirty Utilities, Volume One is a disk chock full of the handiest programs you have ever bought. Included is a super disk cataloguing program, a desk accessory mover, a font manger, a document launcher (when you boot a disk it launches a document), and more. Several desk accessories including a menu bar clock and a terminal are on the disk. "File info" and "Q&D Filer" are two file management desk accessories that you'll wonder how you got along without. $39.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247.

Quick Disk is a RAMdisk utility. Users can create RAMdisks up to 350K on 512K Macs. Works well and has good documentation. $34. Symmetry Corporation, Suite 103S, 3900 East Camelback Rd., Phoenix, AZ 85018.

QuickSet is a set of desk accessories that will help users manage their files and documents. Simple to install and well documented, this set consists of a calendar, a phone directory, and a calculator. Also included are a notepad and a file encryptor. $99. EnterSet, Suite 408B, 410 Townsend, San Francisco, CA 94107.

Switcher is Andy Hertzfeld's contribution to Mac productivity. This program lets users run several programs at once (up to eight on a 1-megabyte or larger machine). Switching between the programs is near instantaneous. Slick and easy to use; every 512K Mac user should get it. Runs on 512K Macs and larger. $19.95 from Apple, free from MAUG on CompuServe and included with some third-party applications. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014.

TimeBase keeps track of daily, weekly and monthly scheduling. Data from other Mac applications can be used within any schedule user creates. Files are limited to space available on the disk. Not easy to use unfortunately. $149.95. SoftDesign, Inc., 14145 S.W. 142nd Ave., Miami, FL 33186.

TurboCharger is a disk-caching program. It works by storing frequently used portions of a disk in a memory buffer and it can dramatically speed up operation (250 to 500% improvements are common). Features include auto-startup and write buffering. Only works on a 512K Mac but is a must for one. $95. Nevins Microsystems, 210 Fifth Ave., New York, NY 10010.

Twelve-C Financial Desk Accessory brings all the power and functionality of a Hewlett-Packard 12C programmable calculator to your desktop. Can be programmed and all registers can be viewed while calculator is running. $39.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247.

MINIFINDERS

XL/Serve converts a Mac XL into a disk and print server. Uses the AppleTalk network and is easily hooked up. Users can partition the Mac XL's hard disk into multiple volumes (read-only for common access and read-write for private access). Runs in the background on the Mac XL, so users can work on all machines in the network. Comes with a backup and restore utility. $195. Infosphere, Inc., 4730 SW Macadam, Portland, OR 97201.

MUSIC

ConcertWare is a sophisticated three-part program. Lets users either create their own instruments or use any of 34 provided in composition that are created in a writer module. A player module plays the best sounding music available from your Mac's sound circuits. Comes with over 20 compositions; many more are available in the public domain. $49. Great Wave Software, PO Box 5847, Stanford, CA 94305.

ConcertWare+ is an enhanced version of *ConcertWare*. Has different instruments and the ability to use any four of a set of eight at any point in a musical piece. Can read and use *ConcertWare* and *MusicWorks* files. The best program for those who want to listen to music on their Mac. $69.95. Great Wave Software, PO Box 5847, Stanford, CA 94305.

MusicWorks allows the user to create and play simple musical compositions. Music entry is by either a grid or a staff and is very easy. Users can select various instruments and modify each to produce new effects. Compositions are limited to 64 measures and overall limitations make this a beginner's program. There are many public domain music files available to play. The manual is clear and thorough. $79.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.

Professional Composer is aimed at music professional. Produces performance-quality sheet music; has only limited playback facilities. $495. Mark of the Unicorn, 222 Third St., Cambridge, MA 02142.

DIGITIZERS

MacVision is a digitizer that uses an ordinary video camera for input. Capable of extremely fine results and special effects. Easy to use and well documented. $399.95. Koala Technologies Corporation, 3100 Patrick Henry Drive, Santa Clara, CA 95052.

Magic is both the most intimidating and easiest to use digitizer available. Use a regular video camera for input. Once the crowded screen is mastered, any effect is possible. $399, $549 with camera. New Image Technology, Suite 104, 10300 Greenbelt Rd., Seabrook, MD 20706.

MicronEye is a rather crude digitizer. Hard to use and capable of only doing a half screen at a time, with no facility for easily matching up parts. This was the first Mac digitizer and has been surpassed by newer models. $395. Micron Technology, Inc., 1475 Tyrell Lane, Boise, ID 83706.

ThunderScan replaces the ribbon cartridge in an ImageWriter, which is required to use it. Laser scans art that can be run through the ImageWriter, producing high-quality digitized images. The images can be manipulated as they are created or afterward. Compatible with 15-inch ImageWriters. Output has been optimized for LaserWriter. $229. Thunderware, Inc., 21 Orinda Way, Orinda, CA 94563.

ACCESSORIES

The Easel is a compact and portable carrier for up to 20 disks. Can be converted into a standup rack for desktop use. Solidly made, attractive and useful. $19.95. Innovative Technologies, 5731 La Jolla Blvd., La Jolla, CA 92037.

Ergotron is a Mac (and external drive) holder that allows a full range of swiveling and tilting. Very strong, this well made unit is also very easy to use. Simply raising the Mac 4 inches off the desk results in a more efficient viewing angle for users. $99.95. Ergotron, Inc., PO Box 17013, Minneapolis, MN 55417.

Mac Daisywheel Connection is the most straightforward way to hook a Mac to a letter-quality printer. Works well with most popular printers and is easy to install and use. $89. Assimilation, Inc., 485 Alberto Way, Los Gatos, CA 95030.

MacNifty Joystick Convertor plugs into the mouse port and allows use of any standard nine-pin joystick or controller, such as those manufactured for Atari or Commodore 64 computers. Package includes a tiny Amiga-style joystick, a pint-sized powerhouse that literally operates with a single finger on the stick. Cursor movement speed is adjustable. $44.95. Kette Group, 13895 Industrial Park Blvd., Minneapolis, MN 55441.

MacNifty Stereo Music System converts Mac sounds to simulated stereo by splitting highs and lows between two powerful speakers. User controls bass, treble, balance, low and high impedance output, and most importantly, volume. Hear your music compositions the way they were meant to be played. $79.95. Kette Group, 13895 Industrial Park Blvd., Minneapolis, MN 55441.

MacNifty Switch allows any port on your Mac to connect to two peripherals. Turn the knob to switch between the two devices. Plugs are friction-fit, not screw-fastened like most Mac peripherals, so in some cases may loosen by themselves. $34.95. Kette Group, 13895 Industrial Park Blvd., Minneapolis, MN 55441.

MacStation is a compact workstation for a Mac, ImageWriter and external drive. Made of strong plastic, it is reasonably attractive. Well vented; will not cause a Mac to overheat. Only flaw is that printer paper feed doesn't really work; users will need space behind the unit to store paper. $95. The MicroRain Corp., PO Box 96008, Bellevue, WA 98009.

MacTablet is a stylus-driven graphics tablet. Users can easily sketch or trace art using this absolute-positioning device. Has a working area the size of the Mac screen. Works well with all Mac software, including *MacDraw* and *MacPaint*. Allows concurrent use of the mouse. $495. Summagraphics Corp., 777 State St. Extension, Fairfield, CT 06430.

Mousetrak is a fabric covered foam mousing pad. It will increase the efficiency of your mouse while helping to keep it clean. Pad comes in a variety of colors. Particularly useful in the typical office desk top environment. $10. Moustrak, Inc., Suite 503, 1 Weatherly, Mill Valley, CA 94941.

Omni-Reader scans optical character (OCR) text and inputs the text in Mac software. Requires carefully prepared text and is very slow as the actual scanning is done by hand moving the scan hand in guide over the text. $799. Oberon International, Suite 630, 5525 McArthur Blvd., Irving, TX 75038.

Mac Turbo Touch is a mouse replacement device. Features include 2.5-inch diameter track ball with control buttons to either side. Users either love it (and refuse to use anything else) or hate it; very few so-so's on this product. Takes a few days to get used to. $129. Assimilation, Inc., 485 Alberto Way, Los Gatos, CA 95030.

MR. MAC PAINT

(continued from page 129)

puter what to do with the selection.

So I came up with this new model. At first I couldn't get anybody in the group to go along with my idea that you should select a tool first. So I made a mock-up of a structured graphics editor with only a few basic tools—horizontal, vertical, and diagonal lines; box/rectangle; and text-simply to show what selecting a tool first would be like. This was the prototype for what turned out to be *LisaDraw* and, eventually, *MacDraw*. Once I brought it around the lab and made everybody try it, they said, "Of course," and immediately dropped the other one we were working on. From there, *MacPaint* just sort of evolved as I kept adding new things I figured out how to do. Mark Cutter then implemented *LisaDraw*—and now *MacDraw*, too—with this palette of tools along the left edge of the window.



How did the small size of the Mac's development team affect the end project?



Our goal was to make a machine with soul, and to do that the creators had to be of one mind. So, the size of the development team became very important. Lisa had 100 designers—a large team. A lot of time was spent disagreeing on what we wanted to build, instead of figuring out how to build it. With Mac, we kept the software design team down to only 10 peole. You know, you can have 100 people paint a wall, but you can't have 100 people paint a portrait and expect the result to be a masterpiece.

Having one mind allowed us to move very fast, stay up late and work long hours because we had the chance to do something that would rock the world. We knew that chance would disappear if we didn't act on it.



Was the team restricted to 10 even in the later stages of the Mac's development?



Yes. The software design team stayed the same size until the Lisa and Mac divisions merged after the Macintosh was shipped in January 1984. During this time period, however, we did court outside software developers. This was important because, in the long run, they would write 99 percent of the software for the Mac. Our job was to design and build the machine.



Are you more creative in a group setting or working alone?



I work better alone at home. I'm a real perfectionist, and that's OK as long as you're working for yourself. I wrote every line of QuickDraw. No one else saw it or touched it. I wrote the Window Manager, the Menu Manager, and the Event Manager for the Lisa, all three of which were ported over to Mac, translated into assembly language, and cleaned up by Andy Hertzfeld.



***MacPaint* is extremely easy to use for a first-time user. How important was this to your overall scheme?**



One of the things I really tried to do was hide unnecessary features. A feature discovered after you've been using *MacPaint* for a while doesn't intimidate you. But seeing all the features at once when you first approach the program can be very intimidating and can make a barrier that stops you getting in and using the program.

When you start in and pick up the Paintbrush—you don't even pick it up; the program just comes up with the brush—you get a very gentle introduction into *MacPaint* that lets you do everything without looking at a manual.

People don't read manuals—at least, 90 percent of people don't read them. Well, we shouldn't complain that they don't, but figure out how to live under that constraint. You know, they don't make manuals for video games, but people use them. If you want to look at a model for user-interface design go look in the arcades, because there the whole game—what they're selling—is all user interface. It's not doing any productivity work for you; all it's doing is tickling your user interface. Those games that have more contact—more pull—are the ones that are going to get the quarters.

Xyphus™

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Macintosh version by Robert Hardy



- *Combines strategy and fantasy*
- *4 character independent movement*
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MR. MAC PAINT



What programming language did you use to create *MacPaint?*



I used a mixture of Pascal and 68000 assembly language. There are two files that hold the *MacPaint* code, one for the source, one for the object. (*Source code* is what most programmers write; it is written in a programming language like Pascal, which typically cannot be directly understood by a computer; *object code* is the translated, or compiled, version of the source code; often called machine language, it can be read only be a specific machine —in this case the Macintosh.) By source-code size, or the file size of the text, it is about 60 percent Pascal and 40 percent assembly language. By object-code size, it's 70 percent Pascal and 30 percent assembly language. By frequency of working on it, I would bring up the Pascal file 20 or 30 times for every one time I brought up the assembly language file.

Basically, the information in assembly language doesn't really need a lot of maintenance. The assembly-language portion contains things that are there for speed, or that were small and I knew wouldn't need a lot of maintenance. I put them in assembly language just to reduce the code size. By keeping the main control, flow, and logic in Pascal, the program was more pliable.



QuickDraw works in color. Will the Macintosh ever be available with color capability?



It would be real easy to build a color machine, but would people buy it? With the Apple II, we built a low-resolution color machine that people use basically for education and games. It was a situation where having low-resolution color wasn't a hindrance, and the fact that they couldn't print the color was not a problem.

When we wanted to build a machine to do word processing, it was no longer acceptable to have only 280 dots across the screen. It was important to have enough resolution so that you could see the lines wrapping on the screen in exactly the same places they wrap on the printer, meaning higher resolution than a standard television. So once we'd accomplished this, the next hurdle was color. One of the stumbling blocks was cost. We wanted to build a lean, mean machine that we could get out to a lot of people. We wanted to provide the most bang for the buck. It's not the most *bang*, it's the most bang for your *buck*.

I would rather see a high-resolution black-and-white Mac selling for $500 than a Mac of the same resolution with color for twice the price. I still want to get the price down so that more people can afford one.

A second point is that in the office, it is still a black-and-white world. How many copiers do you know that copy in color? How many laser printers do you know that print in color? Some dot-matrix printers print in every color —very awkwardly. There are some ink-jet printers that are just starting to work with color, but they jam up a lot.

Whenever we put out a machine, we need to get third-party vendors to write software for it, and they're only interested in writing programs when there's a million machines or more. If we can't sell a million of something, we can't sell it at all. Someday we're going to build a lap-sized Mac, and that is going to happen a lot sooner without color. The most bang for your buck really points quite heavily toward black and white, despite the fact that Apple Computer started with color. Again, we want to reach people, and if we could provide color for anywhere near the same price, it would be great.



FatBits is one of the most appealing capabilities of *MacPaint*. How did it come about?



FatBits took me a while to figure out. At first, I intended only the Pencil to work in FatBits—all you could do was to click on single-pixel dots. The major breakthrough was figuring out how to design FatBits so that all the tools could be "alive" —for instance, how to stretch out a circle while you were in FatBits. I remember that I was really excited when that happened.

I came by the FatBits name because it was catchy. I got a lot of flack from the marketing types who said that I should use the word *Magnify*, and I kept saying, "Can you imagine some kid walking down the street saying 'Wow, Magnify! Magnify!'?" FatBits is catchy and it is a little bit irreverent in the same vein that Goodies is, I guess. I was reacting a bit to the stodginess of Lisa. When we did the Lisa design, everything was considered very carefully so as not to step on anybody's toes, bending over backward not to offend a conservative businessman. And I felt that compromised the personalities of the programs themselves. It's OK to have a conservative program and it's OK to have one that's a little more flashy, but you have to be true to your own feeling when your're creating them in order to get one consistent feeling. I'm sure there are people offended by the word *Goodies* and people offended by the word *FatBits*, but for all those who are offended, there are those who think that's neat and enjoy it. I just had to be true to my own taste. I like the word *FatBits*.



As chief designer of the user interfaces for both Lisa and Macintosh, how do you compare the experiences?



On Lisa we would not have been able to get away with the palettes on the desktop, because that was not in the Lisa paradigm—you had to go up against a committee to decide about everything. But the deal I made with Apple about *MacPaint* was that I would do the absolute best I could, but correspondingly I got absolute say on every decision. I would listen to people and solicit input and get lots of feedback from people using it, but ultimately I wrote every line of code and made every decision according to my best judgment. I'm not perfect, but at least it has one person's feel to it and I think that's more important than conforming to any rigid set of rules. Since it has been such a success in the marketplace, they'll give me even more freedom next time. I don't think a programmer could ask for more than that.

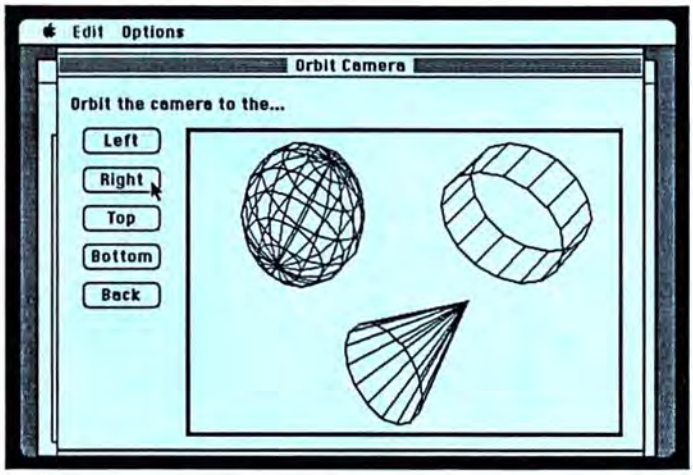
Mac3D

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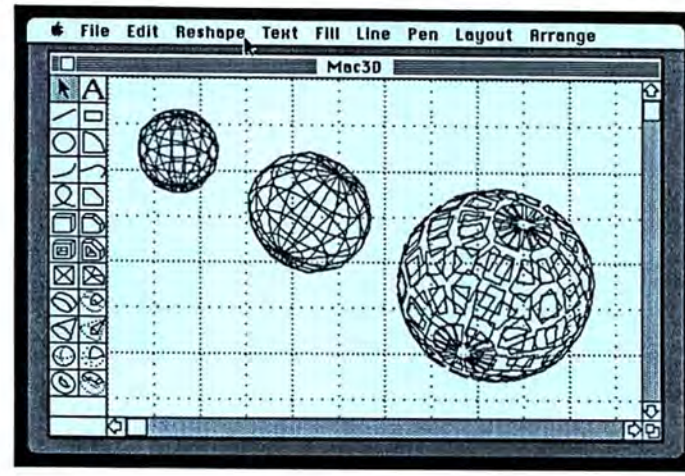
Mac3D™ is a powerful three-dimensional graphics package now available exclusively for the Macintosh™.

Use it to create technical or free form drawings and designs. Simply select from a palette of basic shapes and then stretch, flip, resize, reshape and/or rotate your drawing along any axis in three dimensions--much like you would shape a globule of clay and examine it in your hand. Features include:

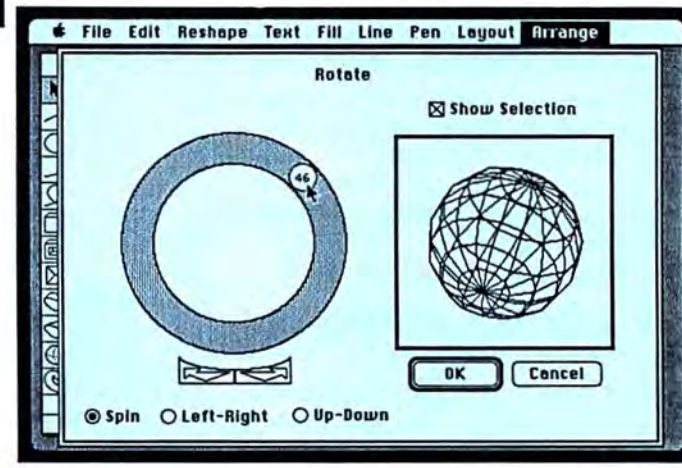
- **Advanced tool palette.** Select Text, Freehand Drawing, or shapes like Rectangles, Ellipses (includes circles), Polygons, Pyramids, Polygonal Prisms, Polygonal Pyramids, Ellipsoids, Cones, Cubes, Cylinders, and Tori (doughnuts).



- **Moveable Camera.** Use our new Setup Camera option and observe a drawing from virtually any point of view--even from the inside looking out!



- **Reshaping capability.** Move any vertex, edge, or surface of an object and the remainder of the object will automatically reshape itself.
- **Standard and custom rulers.** Use the rulers we provide, or create your own for greater precision.
- **Enhanced Pattern Editor.** Choose from among the many fill and pen patterns provided, or create and edit your own.
- **360 degree rotation.** Use our new circular scroll bar and rotate your design or drawing in one-degree increments to any orientation possible.



Mac3D requires a 512K Apple® Macintosh™ and an external disk drive.

For more information see your local computer dealer or contact:

CHALLENGER SOFTWARE
18350 Kedzie Avenue
Homewood, Illionois 60430
Phone (312) 957-3475

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(continued from page 54)

already in place. Before the columns are set, the title can be centered.

With the column guides in place, two graphics are placed and positioned. A photograph occupies the top of the first column, over an editorial. The photo will have to be attached later. A box is drawn to mark its position.

A small cartoon drops into the bottom of the right column, half a column wide. The "cartoon" chosen is a portion of a *MacDraw*-enhanced pie chart, and fits neatly into the space although the rest of the picture hangs over. The cropping tool will cut the unwanted portion of the picture without affecting the size or shape of the desired cartoon. Setting the graphics first sets limits on where text can flow, and makes it possible to bend text around the cartoon in a narrow column.

Output . . . Finally

It's done. The report is first saved and then printed out on a LaserWriter. For a report that would receive wide distribution, the boards printed out in *PageMaker* would be sent to a printer just as hand pasted boards would. The LaserWriter is not the tool to make several hundred copies. That's what printing presses are still for.

PageMaker does work with the ImageWriter, but the quality of work that can be achieved with this program is defeated by the poor resolution of the ImageWriter. *PageMaker* output produced on an ImageWriter often differs considerably from the screen version. This does not happen when using a LaserWriter. LaserWriter output is much truer to the screen.

There is one significant flaw with any output. *PageMaker* has no automatic or forced hyphenation. Word spacing, in justified text, can be very poor.

Conclusions and Caveats

PageMaker is a wonderful program with a few quirks. Disk crashes occur often in large documents, especially when you have Placed a single file several pages long. Cut/copy failures are frequent, but a crash can sometimes be avoided by selecting Undo immediately after the failure.

Using *PageMaker* with two floppies for documents of any size is insane! Printing a large document from a separate data disk can crash the program and destroy your files. Especially since *PageMaker* works quite well with hard disks. (Aldus claims that it works with all but the *Corvus*. It certainly works on the *Hyperdrive*.)

A thorough *PageMaker* system would include a good word processor, *MacPaint* and accessories, and *MacDraw*, all running under *Switcher* (this works quite well too) on a hard disk and connected to a LaserWriter or another PostScript-based typesetter.

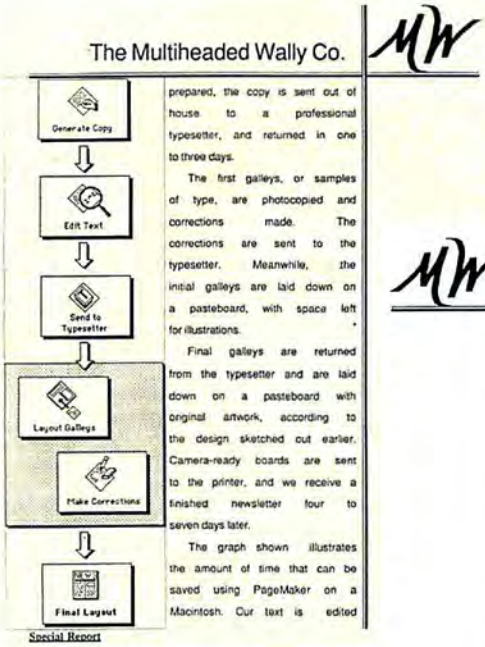
With a system like that it is possible for Everyuser to play "Rupert Murdoch" in his or her own office.

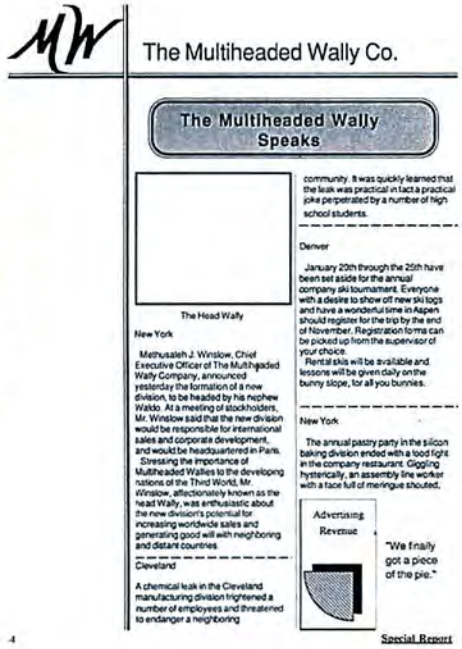
PAGEMAKER:REPORT CARD

Follows Mac Interface	*****
Printed Documentation	***
On-Screen Help	****
Performance	****
Support	*****
Consumer Value	****

Comments: Good general desktop publisher, full-featured but missing on a few points.
Best Feature: Flexibility in manipulating text and graphics.
Worst Feature: Disk crashes when working in large documents and poor spacing because it lacks automatic hyphenation.

List Price: $495. Requires 512K, second disk drive and printer. Best used on a hard disk with the LaserWriter.
Published by Aldus Corp., Suite 400, 616 First Ave., Seattle, WA 98104 (206) 441-8666.





(continued from page 78)

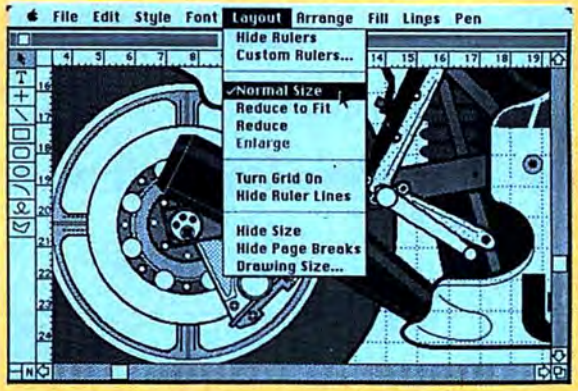
Another bonus is an interesting new pictorial font called Taliesin. Somewhat similar to Cairo, this font sports a wealth of architectural and related symbols.

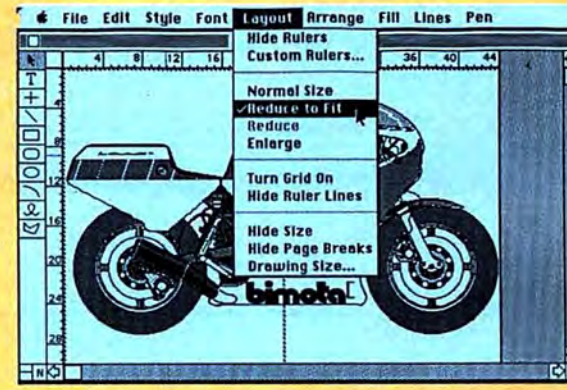
While the manual supplied with the program is of the high standards one would expect of Apple, it was completed in December, 1984 and the program has undergone some major changes since then. These changes have been documented in a seven-page update which is included with the manual. These sheets contain some of the most important information in the whole package, such as text handling and pasting *MacPaint* images, so make sure that you don't lose them.

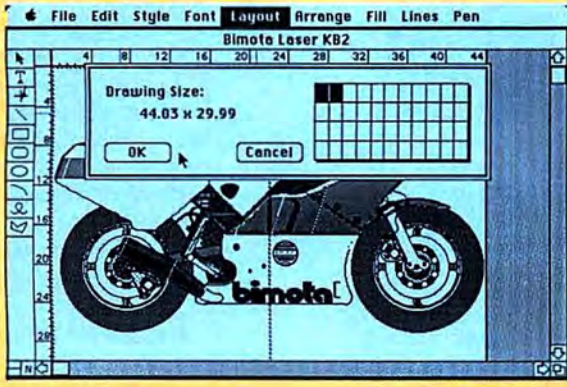
A word of warning: One of the main reasons that *MacDraw* has been so delayed getting to market was the problem of getting it to work within the relatively miniscule free memory of a 128K Mac. While *MacDraw's* authors have succeeded, the 128K Mac imposes strict limits on the size (the number of objects in a given document) of a drawing that can be accomplished and printed. In particular, pasting *MacPaint* images into *MacDraw* uses enormous chunks of memory, and often will not be possible on a 128K machine; the program will also run much slower, demanding disk accesses every time you return to the menu bar. The Bimota motorcycle drawn here — using just 10% of the available memory on a 512K Macintosh — could not possibly have been drawn within the limits of the smaller machine.

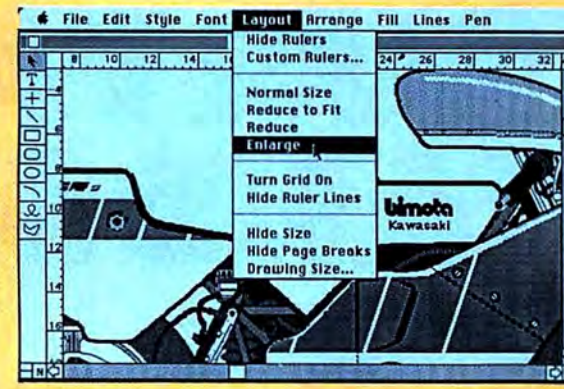
Since objects in *MacDraw* are not dealt with on a pixel-by-pixel basis, there's no FatBits facility and no eraser. Objects can only be removed by either deleting them completely, or drawing another object over them. Many people used to working with *MacPaint* find the lack of these two tools annoy-

(continued on page 153)









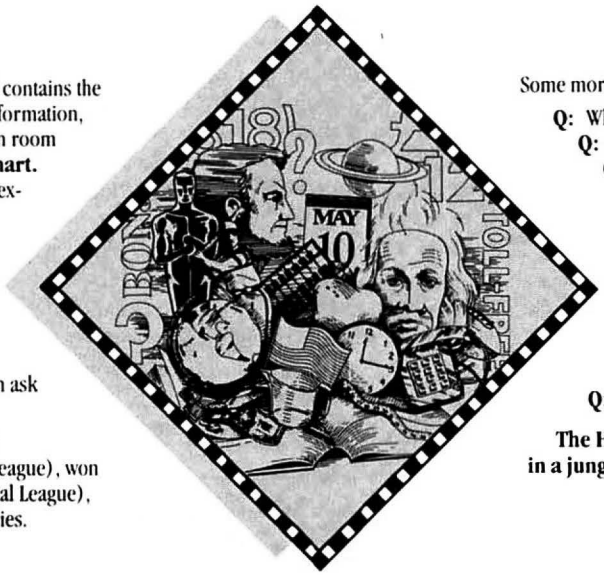
Scaling the Drawing

MacPaint's ultimate limitation is the tiny size of its window, and the difficulties involved in working on a larger page size. *MacDraw* has no such limitation — any drawing size can be accommodated, up to 96 inches wide by 48 inches deep, and a drawing can be made even larger using the LaserWriter's enlargement capability. A *MacDraw* document can also be worked on at a variety of scales: from "Reduce to Fit," where the whole drawing, regardless of its size, can be seen and worked on, up to normal size. When working on sizes larger than standard printed paper, the image is printed out in sections—and there's even an option for continuous printing, ignoring the page breaks. Even at the smallest scale the rulers are still visible, so artists can still work to reasonable standards of accuracy. Cutting and pasting can also take place on top of the scale, and it is possible to copy huge objects from one drawing to another.

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Q: How many Mexican pesos is a US dollar worth?
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Q: What is the time now in Tokyo?
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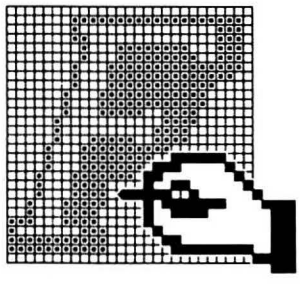
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MASTERING MACDRAW

ing. Indeed, most *MacPainters* are generally intimidated by *MacDraw* at first, for as a technically oriented package it loses the immediate user-friendliness and familarity of *MacPaint*. For some the transition can be difficult.

For those new to *MacDraw*ing, some helpful advice would be: perservere! Most people find it a difficult program at first, but after you begin to understand the way it works and the power of the facilities it offers, you'll find that you can work with amazing speed and precision, far more so than you could in *MacPaint*.

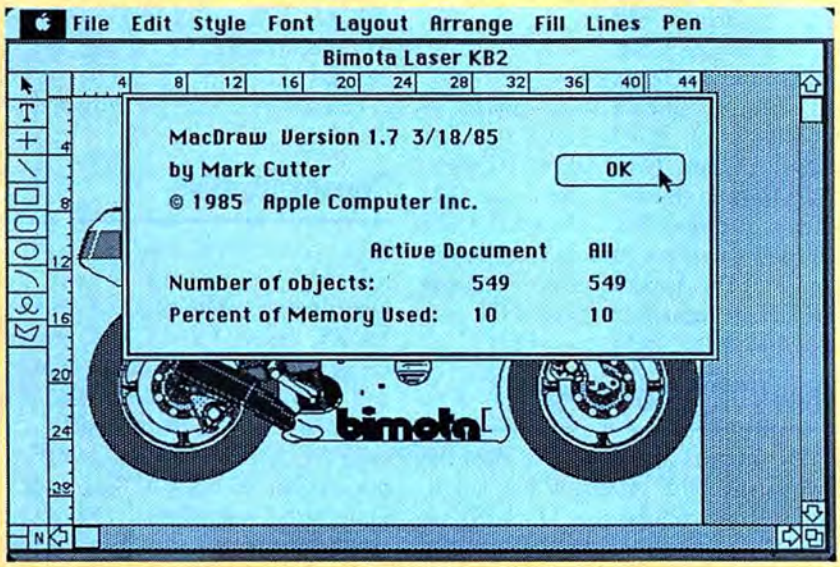
MACDRAW: REPORT CARD

Follows Mac Interface	*****
Printed Documentation	***
On-Screen Help	*
Performance	*****
Support	****
Consumer Value	*****

Comments: Easy to use object-oriented graphics. Can create really high quality drawings in very large sizes.

Best Feature: Efficient memory usage allows large, complex art.
Worst Feature: Text handling, which is awkward.

List Price: $195. Requires 128K, 512K, external drive and printer recommended.
Published by Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. (408) 996-1010.



Memory Matters

Users of the 512K Mac can ignore the space used and remaining information that appears when About MacDraw . . . is selected on the Apple menu, but 128K owners must pay careful attention to this information, since it's extremely easy to run out of memory. And few things can be more frustrating than nearly completing a drawing, only to find out that you don't have enough memory available to finish it.

Although *MacDraw* is aimed primarily at architects, designers and illustrators, anyone who works with visual information will find the program useful. People who work with graphics will begin to wonder how they managed ever without it.

HEY, BIG SPENDER!

(continued from page 88)
manner.

Peak monthly profit, revenue and shareholders' equity are the yardsticks used to measure the player's performance.

Simulating Your Personal Goals

Squire, the latest in the Blue Chip spreadsheet-and-chart simulations, will only run on a 512K Mac. Unlike its forebears, *Millionaire, Tycoon* and *Baron, Squire* will not feature the elaborate windowing or graphics embellishments usually found in Mac editions, relying instead on the bare text style Blue Chip uses for its line of games on other computers. Designer Jim (*Millionaire, Tycoon, Baron*) Zuber explained that, with its integrated financial data and real-life simulation mode, the program just wouldn't fit on a disk if the usual Mac-style touches were included. Still, we think we'll miss the Mac's distinctive touch.

Squire integrates the elements found in each of the earlier games. But in addition to buying stocks, commodities and real estate, players have the option of investing in collectibles like stamps and antiques, and/or putting their money away in IRAs.

The most interesting feature in the program is the ability it gives users to input their own financial goals (retirement at age 35, or perhaps a college education for the kids), then "play out" their financial strategies in the simulated marketplace. As in the other Blue Chip games in this group, the Financial Journal provides the clues as to what will happen in the future; it's up to the player to use this information to maximum advantage.

Playing through a financial simulation might not help you balance your own checkbook any better. Still, all of the programs mentioned above provide both enlightenment and entertainment. You may not be able to win real cash playing. . . . But look on the bright side. You can't lose it, either.

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OVER THE TOP WITH OVERVUE

(continued from page 62)

Joint Resolutions

Since most other databases have already been passed by, it is only fair to consider a value-added features in *OverVUE*. Datasheets can be joined together by creating a Relation file. A Relation file is simply a template that connects two identically or similarly formatted data sheets. The new format is laid out in *MacWrite* or *MS Word*. For example, two mailing lists exist as datasheets. Some columns have the same column names, some differ. The columns are joined by an equal sign:

Name = Company Name
Address = Address
Zip = ZipCode
Phone = Telephone

Save the layout as a Text Only file in *MacWrite* or *Word*. Load the first datasheet into *OverVUE* and choose the Join command from the File menu. A dialog box will appear. Click the new datasheet intended for the join and click the Append button. Pressing OPEN prompts a selection of the relation file. Select and press OPEN.

OverVUE Is Not an Island . . .

The import and export of data between different programs has led to several basic conclusions. One axiom is that the more programs software can communicate with, the more useful it is. *OverVUE* claims to be able to exchange data with almost any other software. Strong words.

The easiest way to export data is via the clipboard using the Clip and Quit command. Selected records on the clipboard can be pasted into other Macintosh programs like *MacWrite* and *Multiplan*. Data can be exported to Microsoft *File* by selecting Edit Report Template from the Print menu and choosing Microsoft *File* from the Special menu. The required export template is automatically created. Select chooses the records to be transferred to *File* and Print Report to Disk creates a text document that can be read in by *File*. These same features will perform a mail merge in *Word*.

DIF files are special formats used for moving data between Apple II and IBM PC computers. Generally, DIF files must be sent to a Macintosh via modem. Once received they can be moved into *OverVUE*. Selecting Import from the File menu brings up a dialog box. Select the file, check the DIF button and click OPEN. *OverVUE* imports the DIF file into a new datasheet. Microsoft SYLK files are created within the Microsoft programs. Import them by checking the SYLK button in the Import dialog box.

Files from *dBASE II* must again be transported by modem. Once the data file is on a Macintosh disk it can be imported by checking the *dBASE II* button in the Import dialog box.

Data can be imported from *Helix, PFS: file, 1stBase, DB Master* and *Omnis 3*. Techniques for doing this are beyond the scope of this review but detailed instructions are provided with *OverVUE*.

Documentation

The documentation for *OverVUE* reflects the meticulous care that went into designing the product and ProVUE's desire for all the powerful features in the program to be explained and made available for use. Too many products come to market with hastily executed manuals that skip over details not considered relevant for beginners. Only with a manual such as this one is expanded use of a sophisticated product made possible.

Conclusion

OverVUE 2 is a superior product. In terms of combining spreadsheet functions with extended sorting, summarizing routines, mail merges and report generation, it will find a welcome place in any business software library. The addition of macros and graphics round out this product's appeal. If its virtues ended there it would be one of the most attractive database products on the market today. But it is more. It is a data manager, and easily the fastest and most adaptable one for the Macintosh. ProVUE's decision to allow for import/export with virtually any other software and operating system including MS-DOS and CP/M in ASCII format adds up to one of the best all around software products available for the Mac.

AD INDEX

Page #	Advertiser	ReaderSvc#
5	Aegis Development	65
152	Altsys, Corp	99
95	Ann Arbor Softworks, Inc.	35
134	Applied Logic Systems	79
107	Arrays Inc	57
47	Assimilation Process	53
49	Assimilation Process	91
Cov2, 1	Blyth Software Corp	85
105	Boston Computer Publishers	38
17	Business Computers of Peterborough	-
149	Challenger Software	41
28	Comark Inc	67
127	Cricket Software	93
154	Desktop Software Center	48
28	Doss Industries	74
117	Dreams of the Phoenix	55
71	Enterset	92
14,15	General Computer Corp.	81
119	Hippopotamus Software	47
89	Icon Review	78
8,9	Infocom, Inc.	72
26	Innovative Technology	39
10	Layered, Inc.	56
80-83	MacConnection	82
56	MacNifty	64
127	MacTutor	100
34,35	Manhattan Graphics Corp.	45
132	MAUG	83
32	Micro Conversions, Inc.	73
101	Micro Design	70
13	Miles Computing	89
24,25	Miles Computing	96
18	Mindscape	90
Cov 4	NEC Information Systems Inc	98
64,65	Nevins Microsystems	43
121	Nibble Mac	36
72,73	Northeastern Software	76
125	ODS	94
30	Palantir Software	52
6,7	Paradise Systems	88
Cov 3	PBI Software	97
80-83	PC Connection	82
112,113	PC Network	60
147	Penguin Software	77
63	Personal Computer Peripherals Corp.	50
40,41	Programs Plus	69
119	Ribbonland	95
55	Rubicon Publishing	34
57	Rubicon Publishing	33
127	Satori Software	87
48	Sir-Tech Software	62
29	Soft Design	54
12	Spectrum/Holybyte	40
141	Superex Business Software	59
127	Technalysis Inc	-
155	VOAD	86
4	Wiley Professional Software	49

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THE SLOB THEORY OF 68000 PROGRAMMING

GIVE THE MACINTOSH TO AN eight-year-old and you'll see what kind of person immediately falls in love with the machine. Like everything Apple does, kids love it. Apple could do worse than hire Mr. T to sell its products to the younger crowd. This is the real problem Apple has in finding a niche for the Mac. It doesn't seem to understand the mentality of the user. But worse, it is way off course in understanding the mentality of the dedicated Mac hacks.

I think many of us can agree that the Mac-lover isn't a typical businessman. And selling the Mac as a business computer doesn't cut the mustard when a secretary says she thinks the keyboard is too high off the desk to be comfortable or when the user accustomed to business computers finds that there are no escape or control keys on the keyboard. Let's not mention the lack of a numeric keypad except as an option. I could go on. The point is the Macintosh as a long-term success will not be made so by Apple's marketing department. It will be made a success by hordes of dedicated users who hack away at the machine until it becomes something not intended by its designers.

Even the Apple II is largely a creation of the community of users. That machine was originally designed as an uppercase machine like an old teletype. One company made a word processor that used the hi-res mode of the screen to draw its own upper and lowercase.

Besides attracting kids, for some reason Apple attracts a certain kind of random hacker and challenges him (or her) to do something with this equipment. At first I thought this was simply because the company is physically located in the center of entrepreneurial and hacker activity. Soon I realized it is more simple than that.

The latest attempts to create a hacker's Mac, decode the ROM and upgrade to a couple of megabytes to create elaborate animation are all projects initiated by these



hackers. The same holds true for the myriad of peculiar add-ons.

So who are these guys and how are they different?

They are 68000 freaks. Many Mac hackers refuse to admit that the Mac itself is unimportant. They simply like the Motorola 68000 chip and the Mac is an interesting implementation of the chip. Once you understand the mentality of this group you can clearly see all the problems present and future that will be experienced by the Mac user.

The 68000 chip is preferred by certain hacker types for no other reason than the simple reality that it can directly address 16 megabytes of main memory without any concern for memory page segments. The 8080/8086/80286 family has these 64K page boundaries that have to be taken into account by any low-level software development. All kinds of problems are encountered by the assembly language programmer (the speed demons of the world) when they have to write complex and long programs for an Intel chip.

Forget all that. Who cares, say these guys. The chip can directly address 16 megabytes! This is imporant because most of today's 68000 hacker types are simply too lazy to write the necessary extra code required for an 80286. LAZY is the operative word.

This 68000 laziness is reflected in everything from slurred speech to sloppy attire. Anyone who hangs around programmers knows for a fact that those who prefer the Intel family are neater dressers and tend to bathe more often than 68000 hacks. Hey, don't get mad at me for this observation—blame your friends.

I know no 8086 hacks who smoke, while plenty of 68000 programmers puff on cigs all day. An ash-coated programmer is a perfect example of what I'm getting at. Now don't get me wrong. I don't think that all 68000 programmers are slobs, au contrare. A lot of the ex-Apple guys have enough money to buy new clothes and stylish jackets "like Steve wears." And there are one or two bumlike 8086 programers I have known (although I think they wished they worked on the 68000 chip). This is simply an overall impression that is endemic to the 68000 community for NO OTHER REASON than the 16-megabyte address space.

The net result of all this, in my mind, are products with nasty little bugs in the code that are never fixed. Why, for example, are there so many disk swaps on single-drive 512K Macs when there's a ton of memory that should be storing some of the data? The 68000 programmer will shrug his shoulders and look for the potato chips and jalapeno bean-dip instead of eliminating the irritations in the code. "Too much work," they'll say. "Manana."

An Intel-chip programmer will straighten his collar, brush his pants and say, "It's unacceptable. I'm going to fix it tonight."

While 68000 programmers may be more fun than Intel programmers because they can chug-a-lug more beer, I'd rather have the products of those dedicated 8086/286 guys.

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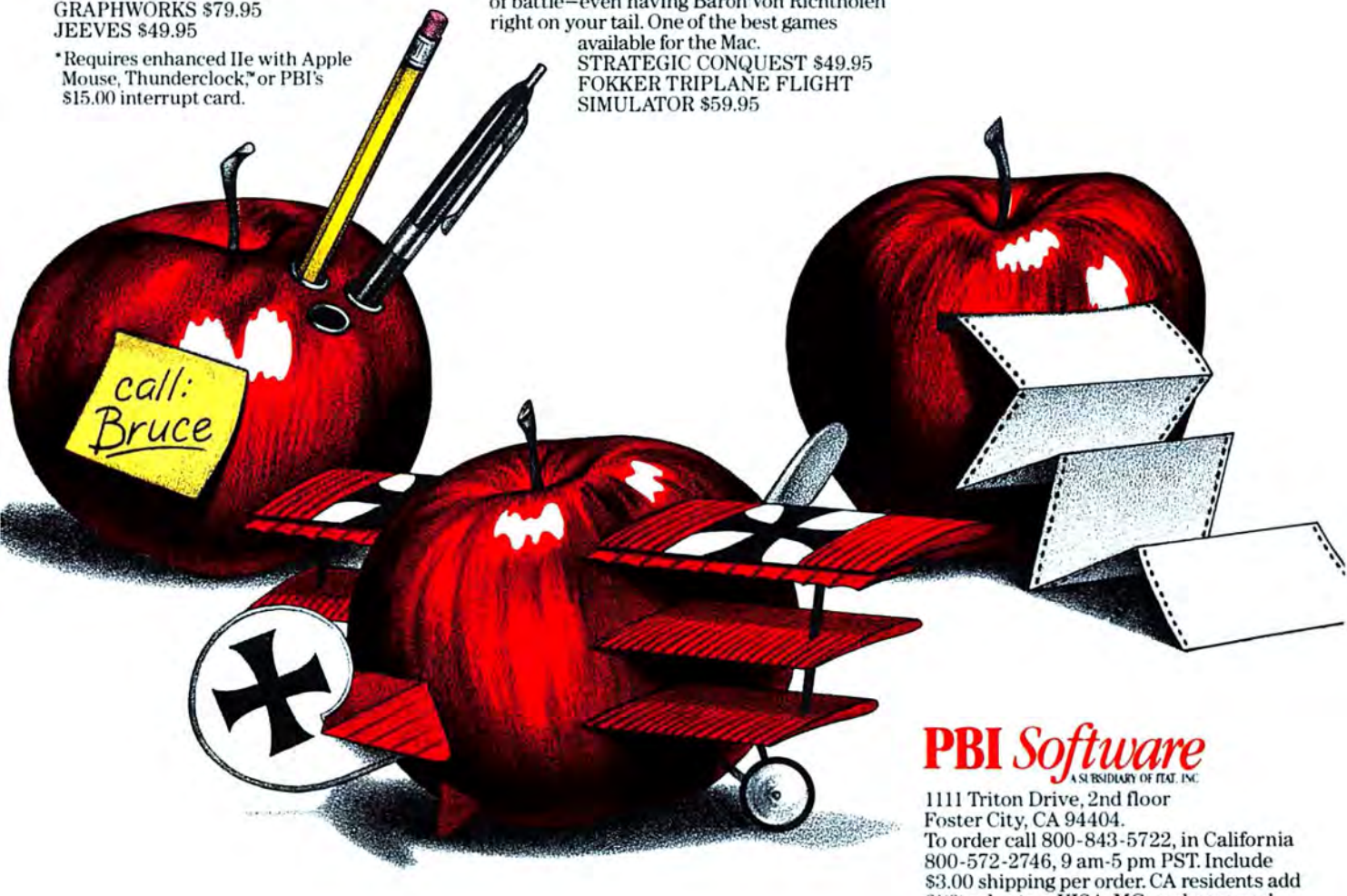
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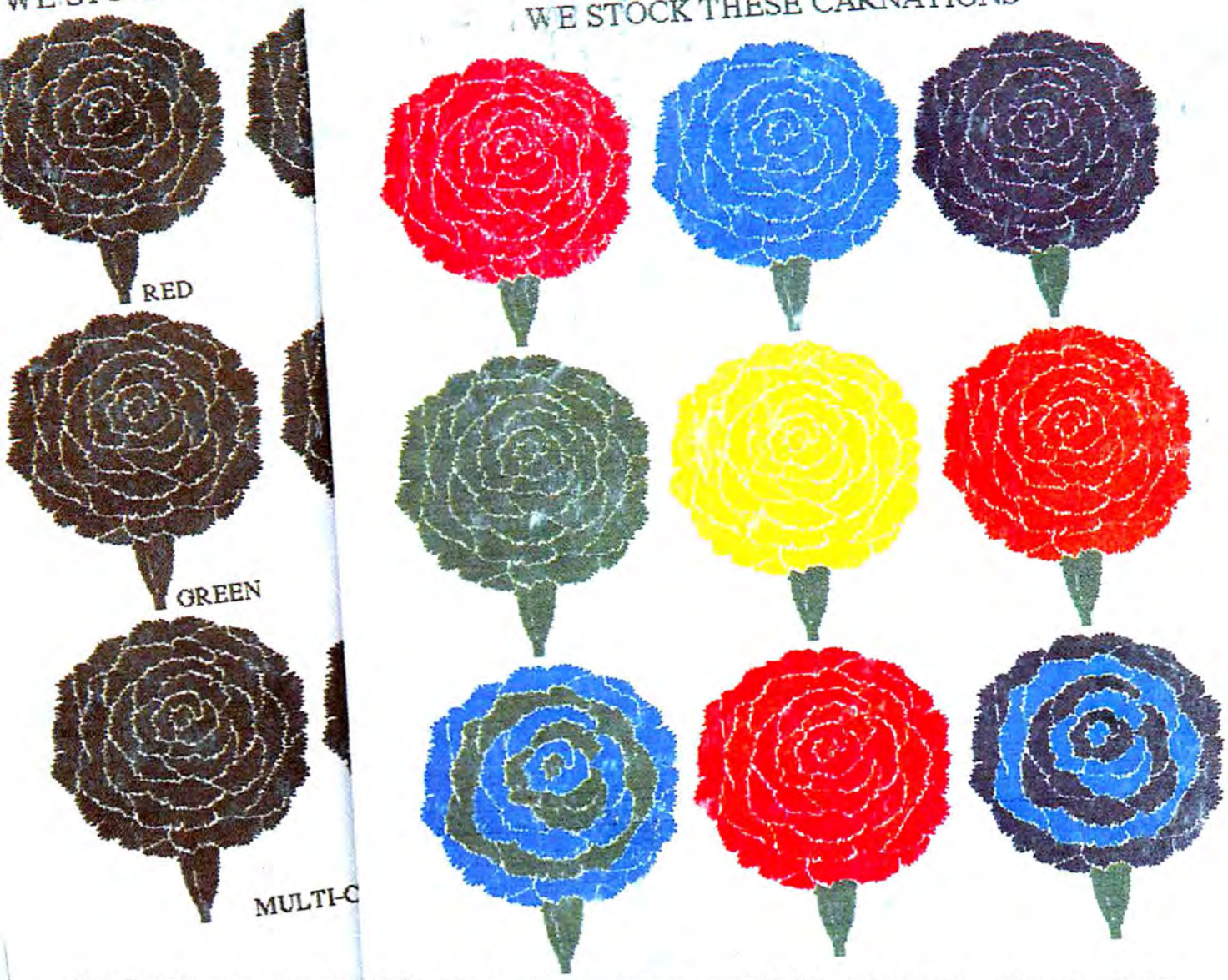
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